

Dr. Wm. Nelson

THE SOUTHERN PLANTER.

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—
Xenophon.

Tillage and Pasturage are the two breasts of the
State.—*Sully.*

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For the Southern Planter.

GRADUATED OR GUARD DITCHES FOR HILLSIDES.

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THE VIRGINIA STATE AGRICULTURAL SOCIETY.]

SKETCH OF A DISCUSSION

*At a Meeting of the Powhatan Farmers' Club, No. 1,
held on May 13th, 1854.*

SUBJECT.

"The construction, use, advantages and disadvantages of graduated furrows on hill-sides, to guard against the washing by heavy rains."*

Mr. Lewis E. Harvie, of Amelia, said that he was an unwilling witness in behalf of hill-side or guard ditches. Formerly he had been much opposed to their use, but had been driven by necessity to adopt them; and was now satisfied that they could be so constructed as materially to prevent the washing and abrasion to which the rolling lands in this region are peculiarly exposed. These lands, while they are generally based on clay, have a large admixture of sand; and from this cause, and on account of their being undulating and sometimes precipitous, are apt to wash in gullies, or the soil is abraded, and the hills are left bare and galled. He tried to arrest this by ploughing deep and horizontally around the hills, and cultivated his crops in the same way, leaving the land as level and smooth on the surface as possible. This was sufficient to prevent injury from ordinary rains; but he found invariably, after heavy rains, that his land was much injured, and that much labor was required to repair the damage done, and to restore the land to its former condition. He was deterred for some years from resorting to the graded or horizontal ditches, from having seen several farms

upon which they were used, but improperly constructed and injudiciously located, and where, consequently, the injury from washing had been greatly increased by them. In consequence, however, of an extraordinary fall of rain which disfigured and seriously injured one of his fields, then in wheat, he determined to use graded ditches on the field that was to be sown in wheat the ensuing fall. The experiment was made, and the ditches located and constructed with much care, and he found then, and ever since, where the same care has been bestowed, that generally speaking his lands have been preserved from destructive washing. Occasionally, some of the ditches are broken or overflowed; and where such is the case, there is made one bad wash, and only one; whereas, without the ditches at the same time, the damage would be general.

Great care should be taken to locate them so as to intercept the water on the hill-side before it has accumulated and been precipitated sufficiently to commence abrading the soil; and they should be projected around the hill until they reach a point at which they can be discharged without injury. Such a position can almost always be found with due care and precaution. In making the ditches, the upper side opposite the bank, should be deepest, so as to cause the water to press against the hill, and not the bank. Generally there should be from two to three such ditches on each hill-side. The one nearest the foot or base of the hill is of great value in preventing the deposit of sand on the flat lands below, which deposit will, in the absence of hill-ditches, fill up the water-furrows or open ditches in the low-land.

The value of these hill-ditches to the flat land at the base of the hills, is scarcely, if at all, less than to the high land they are constructed to protect. They conduct the water, which would inundate and surcharge the land, around the flat to the stream or creek; and thus the water on the bottom land is no more than what falls in rain on the surface.

The fall given to the hill-ditches should vary with their length and exposure. In sharp curves, or in passing across valleys, an increased fall is proper and necessary. In breaking the land, he ploughs across the ditches, and after a few years' cultivation, if they are properly constructed and kept cleared out, there is no difficulty in hauling across them, for they become mounds without a ditch in most places, and then, if the water overflows them, they do not break. It is much better to give them too much than too little fall, for it is much easier to arrest the washing inside than outside of the ditch; and there is more injury usually resulting

* This subject had been previously fixed on for discussion, at the request of Edmund Ruffin, Agricultural Commissioner, by whom this sketch has been prepared and reported, by the permission, and with the aid, of the several farmers who stated their experience and opinions of the practice in question. The interesting and useful character of this subject will be appreciated by intelligent farmers. In addition, the Commissioner trusts that this manner of discussing important, yet questionable subjects, will be approved by all; and that other clubs, or meetings of farmers, will use the like mode of investigating other important subjects, and report the opposing opinions to the State Agricultural Society, for public use and benefit. E. R.

from the accumulation and deposit of sand in these ditches, than from washing in them. They are very valuable in protecting galled land in the process of being reclaimed, and in filling up gullies, if the bottoms of the gullies are first covered with brush or rubbish of some kind.

Mr. William Old, of Powhatan, said that in advocating the system of hill-side ditching or furrowing, he, like Mr. Harvie, could not be charged with being influenced by any pride of consistency, inasmuch as he stood recorded in the Farmers' Register, when edited by his friend, Mr. Edmund Ruffin, as most decidedly opposed, and that, too, after some limited experience.* But, notwithstanding his strong objection to such ditches at the time alluded to, he continued to use a few of them in some peculiarly exposed situations, until their practical benefits so grew upon his confidence, that he now uses them upon all the slopes of his farm where it is practicable to obtain convenient outlets for them. All persons cultivating the rolling lands above tide water are aware that very great injury is done, especially to so much as is under cultivation of hoe-crops, by every heavy fall of rain. Although all are aware of the existence of this constantly recurring evil, it is probable that there are many who have never considered its full extent. When torrents descend, and carry off masses of soil, making large gullies over a field, the injury is so obvious that the least observant may properly estimate its

* Mr. Old's first and unfavorable opinion of these graduated ditches was reported, (from his verbal information to the Editor,) in Vol. X. of Farmers' Register, 1842, in the following passage. Such entire change of opinion of a farmer of so much practical knowledge and sound judgment, serves to give increased value to his later corrected and present views on this subject.

E. R.

"Mr. Old is altogether opposed to the practice of graduated ditching on hill-sides, generally, through a farm, for the purpose of preventing the washing of the land. He uses some short ditches of this kind, on very favorable positions, and as merely a partial preventive. He has seen land thus treated, which the ditches alone spoiled more than all the washing could do in a century of other judicious cultivation; and which was far more disfigured and injured afterwards, by the water breaking over the banks, as it certainly will do, with all the care that can be used. Supposing even (what is far beyond the truth) that the best arranged and constructed ditches, always kept in perfect order, could effect their designed purpose, of carrying off the redundant rain-water, it would be impossible, by any farmer's care, to prevent accidental and unlooked-for stoppages, which would be first made known by turning out the water of a ditch, cutting a gully, breaking by the accumulated force across the next ditch and bank below, and increasing its track of devastation thence to the bottom of the descent. As an example of the insecurity of the system, he referred to one of the graduated ditches, (such as above mentioned,) through his corn-field, which being short, and frequently under his eye, he had several times himself examined throughout its whole length, and with a hoe removed every commencing obstruction. This care was in addition to all general superintendence and repairing. Late in the year he found that the water had broken over, and had begun to cut a gully. The cause was, that the fodder not having been gathered on a part of the adjoining corn, as it decayed on the stalks the small light bits had been blown off by the wind, and some had fallen in the ditch. The first rain floated this light stuff along the ditch, until a straw or small root, or some such thing, caught and stopped a few bits, which served to stop more; and as the muddy water settled and filled the crevices, finally made a dam sufficient to throw out the water. Had this ditch been at the top of the hill, and several other ditches below, this slight cause would have broken every one, and with more and more damage at every successive breach."

importance. But, in his opinion, much injury and waste of soil—indeed to a greater aggregate amount in the course of the year—was done by washings of a less striking character. There are many falls of rain that pass generally and rapidly over the surface, but not so concentrated or violent as to tear up the foundation, or wash the land into gullies, yet quite sufficient to carry off, by general abrasion, much of the soil, or at least, matter, both organic and inorganic, that constituted its principal value. After every beating rain that falls, the sand may be seen separated and deposited in every depression of the surface, besides the large quantity that is precipitated to the flats and streams below. This is but the silex left, after washing away all soluble matter and the more minutely divided and lighter particles of the soil, of which these constituted a part. This, so far, is a complete loss of soil. He said that a great deal of this injury cannot be prevented, but he thought that much of it might be, and by the means now under consideration. If you can lessen the volume of water that passes over the surface, you will, to that extent, lessen the injury done by it. Suppose, then, you have a slope in one of your fields, 150 yards in breadth, it is obvious, that when one of these destructive rains occurs, if the water that falls upon the first or upper fifty yards (for example) be permitted to descend and unite with that which falls upon the next lower breadth of fifty yards, and these two with that which falls upon the third or lowest part, that three times as much water will be passing over the lower section as there was upon the first, and that too with greatly augmented velocity. If, then, by one of these furrows, the descending water, at the end of the first fifty yards, was arrested and conducted gently off to some place where it may be discharged without injury—and so, likewise, for the water of the next breadth, by another ditch, at the end of the second division, then the whole fall of rain will have been disposed of without any greater accumulation on any one portion of the land, thus divided into sections, than what falls upon that portion. These means would obviously prevent much of the washing and injury that would be produced without them. This seems so clear that no argument can be necessary to prove or enforce it. The question then is as to the practicability of constructing the ditches, so as to guard against their breaking and discharging their pent-up volumes of water over the lands below, so as to do as much or more injury than would have been done by the rain-floods, if no such attempt had been made to divert them. This, he admitted, was a danger entitled to serious consideration, and one with which for years he had been so deeply impressed as to deter him from adopting hill-side ditches. He had witnessed upon several farms the most destructive effects produced by them, where they had been inaccurately laid off, carelessly constructed, and badly attended to. But he had now, by many years experience, become perfectly satisfied of the practicability of using them, with care and attention, so as to avoid any injury resulting therefrom. But he was not now an advocate for the indiscriminate use of them, as practiced by some of his acquaintances. Before adopting them upon any field, it is necessary to examine it carefully, and then to determine where the water conducted by them is to be discharged, and whether it can be so discharged without producing as much injury as it would do if suffered to pursue its course directly down the sloping surface without interrup-

tion. In many situations on his own farm, he cannot use them, for want of the proper outlets. Where there are several small streams passing through a farm, separating different hills from each other, they form the most convenient places for discharging therein these hill-side furrows. Where such streams are wanting, it may sometimes be found convenient to discharge the ditches outside of the plantation, in the woods, or on other uncultivated lands. He had occasionally used, very advantageously, old gullies that had been filled up with bushes, and that had their bottoms protected from washing by a thick growth of briers, grass, &c., but only where it was practicable to take the water off from the lower end of the gully by a graded ditch to some stream, so as to avoid throwing the water on the flat land below.

So much as to the propriety of making such ditches at all. Now as to the manner of doing it.

He graded the lines for the furrows, he said, with a common rafter level, which he supposed all were familiar with, having the span twelve feet, and gave a general fall to the furrow of two inches to each span, increasing it occasionally to two and a half, where the hill was steep and the turns short. If the furrow is to be emptied into a stream that descends through the farm, the descent of the furrow should be in the direction opposite to the descent of the stream, so that the descending grade of the one, and the ascending grade of the other, may bring them together. If there is any particular place on the slope designed to be furrowed, that is especially desired to be protected from washing—such as a partially cured gall—take the upper margin of this as a starting point, and grade descending both ways. When it is desirable to run a furrow as high up the hill as the outlet will permit, the head of the stream or ravine designed to receive the discharge, must, of course, be made the starting point, and the furrow be marked off upon an ascending grade all the way. When a starting point has been determined on, and you have provided yourself with a handful of small sticks, cut about twelve or fifteen inches long, place one of them at this point and one foot of your level by the side of it, and move the other foot, until the cord to which your plummet is attached indicates a fall of two inches, then place another stick by the side of that foot, and move the level forward, placing the hind foot of the level precisely in the place from which was moved the front one—and so on to the end. When a line is thus marked off by sticks stuck up at twelve feet from each other, it will present a very zig-zag course, and one that it is unnecessary to follow with the furrow exactly; but, by walking back on the line, and taking up half the sticks and slightly moving others, you may preserve the general grade without these numerous sinuosities. Having thus laid down the line, run three or four furrows of a plough along it, throwing the slices down the hill, and then form the bank by drawing out the loose earth with hoes, taking care to make the top of the bank as level as possible, by drawing the earth backwards or forwards along the bank, as may be required. In opening the furrow, make it deepest at the upper side, or next to the hill, so as to avoid as much as possible the pressure of water against the bank. In furrowing a steep hill-side the greatest care and attention are necessary—more fall should be given, say $2\frac{1}{2}$ inches in twelve feet, at least,—more width, and more depth of the upper part of the furrow. For the loose mass of earth, of which the bank is com-

posed, being thrown on lower ground, will, at its base, be as low as the level, and a portion of it even below the bottom of the furrow, so as to expose it very much to be cut away by the current that passes along the furrow, until the bank becomes settled and sufficiently compact to resist abrasion.

Mr. Wm. H. Harrison, of Amelia, was opposed to the general use of hill-side ditches; 1st, because of the various interruptions to the proper breaking up of land which they cause. It is well known that a hill can be ploughed better, and in shorter time, when ploughed around, so that the furrow-slice is always turned down the hill. But this is impossible, when the surface of the hill is cut up by a succession of hill-side ditches. In this case, the ploughing, of the hill has to be done in sections; and in ploughing each section, half the furrows must be thrown up the hill, and the ending furrow left in the middle is almost certain to wash. It is true, this may be obviated by ploughing across the hill-side ditches; but Mr. H. considered this as very dangerous, by greatly weakening the bank of the ditch, and greatly increasing the labor of keeping it open. A second objection to hill-side ditches, was the great difficulty of keeping them open, in a country as much infested as this with running briers. These soon choke the ditch, unless watched with more care than most persons have time to bestow. The paths which cattle make across the banks, and the burrowing of moles, constantly tend to break them. 3dly. Whenever such break takes place, from any cause, the injury by washing is much greater than if the water had followed its natural course. This is particularly the case where there is a succession of ditches, one above the other. In this case, a break in an upper ditch is followed by a continuous break in all the lower ones, and a deep gully is formed by a single rain. 4thly. The great difficulty of emptying these ditches properly. If the streams or draining ditches, into which the hill-side furrows empty, have any distance to pass through flat land, before they reach the main stream, Mr. H. had always found such lateral ditches filled up by the accumulated washings from the hills, thus brought down in a mass. 5thly. If the hill-side ditches be of considerable length, this greatly increases the liability to break, and its own tendency to wash into a gully.

Mr. H. had once used these ditches very extensively, but of late years had filled up most of them with decided advantage. He still used them with much advantage by the side of roads, and at the foot of hills and gullies, to protect the subjacent lands from the water and wash from above. In other cases he thought they were a costly and dangerous substitute for deep ploughing and sub-soiling. Such was his experience. His observation led to the same conclusions; as several of the worst washed farms in the country were those on which hill-side ditches had been longest and most extensively used.

Mr. William L. Booker, of Amelia, said he had been using graduated ditches for fifteen or twenty years, and an observer of them from the time of their first introduction in the county of Amelia, by Mr. William T. Eggleston, who then resided at the Court House; that at first he was opposed to them, but ultimately found that his objections were all applicable to improper location or construction, or negligent and improper management. He agreed with Messrs. Old and Harvie as to the mode of constructing them.

He preferred rather the bank to the ditch—and,

therefore, made it his object, as soon as the ditch is completed, so to plough the land as to fill the ditch, leaving the bank untouched, and suffering or rather inviting the sod to form. He differs with Messrs. Old and Harvie as to the propriety of their mode of ploughing across the ditches, because, if from neglect or other cause, a breach should occur in the upper bank, it would most likely result in breaking all those below it; and because, if a breach is once made, the water would not again resume its proper course until the bank was mended—whereas, if sod is suffered to form on the bank, these results would not follow, as the water would resume its course in its proper channel as soon as the rains subside, and, though there might be an overflowing of the ditch, no breach would be made.

Most persons who object to the system, are in the habit of so ploughing their land as to form a bank above the lower bank, and thus greatly diminish the capacity of the ditch to take off the water.

If, in ploughing, the operation is commenced in the bottom of the ditch, and the furrow thrown up to the bank, the bank will be gradually increased, and no bank formed above it to confine the water.

If the land between the ditches is always ploughed the same way, throwing the earth above and below, and finishing in the middle, the finishing furrow will be gradually deepened into a ditch, and the ground made uneven. To avoid this, at each alternate ploughing he reverses the operation, commencing the second ploughing by throwing the earth to the middle in the form of bedding, and thus correcting by the second ploughing the errors of the first.

Mr. P. St. George Cocke, of Powhatan, said that his experience in the use of hill-side or graduated furrows or ditches had been extensive within the last fifteen years—as practised upon plantations in the county of Brunswick—upon his place in the county of Powhatan, and also upon the black cane lands of Lowndes county, Mississippi, in connection with the cultivation of cotton and corn.

Brunswick county is situated above the head of tide water, and is in the same geological range of country with Powhatan, Amelia and Nottoway counties—the soil being based upon the granite, or gneiss rock, and varying from a light grey gravelly, or sandy texture, to that of a heavy red clay. The surface is undulating, and near the streams of water, broken with hills and valleys.

This country has all been worked and gullied by the old two-field system of tobacco and corn cultivation, with shallow ploughing, and no small grain crops or grasses to smooth the surface and retain the soil; and in such condition of the land, the use of graduated hill-side furrows is undoubtedly most useful, to arrest the further washing of the surface, and to aid in filling up and smoothing the gullies, and restoring the surface to its natural condition; but he thinks that after having used the furrows and effected the above objects, they may, as a general practice, be dispensed with, whenever hoe-crops are followed by small grain, and these last by clover and grasses. In other words, it is his opinion that it is shallow ploughing, up and down hill, and leaving the land all winter and spring in naked hills and ridges, that cause the washing and gullying; and that deep ploughing, sub-soiling, and other thorough tillage of the soil, with a suitable rotation of crops, in which the hoe-crop shall be followed by small grain, and this by clover and grasses, will speedily and effectually arrest the in-

jury to the lands—which injury is now sought to be prevented by the use of the hill-side furrow.

In fact, he is now abandoning the old furrows, having used them for the above mentioned purposes, and by deep ploughing, (with three horses) and a five-field rotation of crops, the washing has ceased, and the lands are rapidly improving.

But the hill-side furrows often subserve a useful purpose in *drainage*, and he frequently uses them to arrest and carry off the superfluous water of heavy rains from extensive slopes or hill-sides, thereby preventing the overflow or saturation of the soil of the flat land adjoining such slopes.

In Lowndes county, Mississippi, upon the black cane lands cultivated in cotton and corn, and where the cultivation is necessarily shallow, and the land kept perpetually under the hoe and plough, he has found great profit result from the use of furrows, in the following respects:

First. Chiefly by effecting a better *drainage* of the lands, the surface of which is scarcely undulating enough to pass off with sufficient rapidity the torrents of rain that fall in that climate. By means of the graduated furrow, the same water is received and conveyed off at regular intervals over the slopes, and discharged through main drains or ditches in the flats below; thereby preventing its too great accumulation at the foot of the slopes or elsewhere, which before the use of the furrows often resulted in great injury to the growing crops.

Secondarily. By preventing the washing away of the soil, or gullying of the land—the tendency towards which, however, in these lands, is slight, owing to the peculiar mechanical qualities of a soil strongly impregnated with lime.

Upon all light, sandy, and rolling lands, throughout the cotton-growing region, he does not doubt the necessity of hill-side furrows to prevent the speedy and absolute destruction of the soil, so long as the present system of naked, shallow, and perpetual tillage shall be continued upon such lands; but he believes that even in this case, the use of furrows can delay only, and not prevent, the ultimate destruction of all such soils.

Mr. Old, in answer to an objection stated by Mr. Harrison, said that his use of hill-side ditches did not prevent the great convenience and advantage to breaking up the field by the ploughs running around the hills, and throwing the furrow-slices down hill. He ploughed in this manner, just as if no such ditch existed. When the plough had to cross a hill-side ditch, it was usually at a very acute angle, so that the shallow ditch, and its low and flat bank, presented no obstacle. But the ploughman took care, when crossing the bank, to make the plough run quite shallow, so that, while breaking the surface, not to disturb the base and compact mass of the bank. The loose earth thus thrown or left in the ditches, or as much of it as required, was afterwards drawn out by broad hoes. The banks were cropped in the same manner as the field generally—and brought as good, if not better, wheat than any other portions of the field. He would much object to the different practice, (recommended by Mr. Booker,) of leaving unploughed strips along the banks which would more often be nurseries of running briars, than of grass sod. He was surprised at this practice of ploughing each interval (between two ditches,) separately, which required half the furrow-slices to be thrown up-hill, which he would deem a very serious objection.

When the field had been thus ploughed flush, for corn, and the guard ditches cleaned out, the corn

rows were marked off, beginning alongside of, and parallel to, the upper sides of the ditches. Thus the rows continued, generally, along and around a hill-side. But at the short curves of the ditches, the corn rows were made to run out straight, and ended as each one reached the ditch. As the marking off of rows reaches the ditch next above, of course they will not exactly coincide with the course of the bank, and some short rows will be required to fill out the interval. But, taken altogether, the tillage rows are long, not inconveniently curved, or too much varying from a level anywhere; and there is no waste of land or of crop, except in the narrow bottom of each side ditch.

In reference to the remarks of Mr. Cocke, Mr. Old said that while he admitted that any ordinary rains might be absorbed by very deep ploughing, and so not produce washing, yet sometimes there fell rains so heavy and sudden, that, if not conducted off, the surplus must escape in torrents down the hill-sides, and would gutter and wash off the ploughed and loose layer of earth. In such cases, however rare, the washing might be even the greater in proportion to the previous depth of the ploughing. But he denied that preventing the land from being washed into gullies, was the only benefit resulting from the use of guard furrows. The rapid passage of large volumes of water over the land, must necessarily do great injury, by a general abrasion of the soil, by carrying off the soluble matters, the minutely divided particles, and the decayed vegetable matter, which constituted the chief value of the soil. This view of the subject will be forcibly illustrated by calling the attention of every observant farmer to the fact, that he may manure a galled place on his farm as highly as he pleases, and if left exposed to be passed over by every rain that falls until the next rotation, the improvement will have disappeared, the manure will have been washed out, and the same gall will have to be cured again, and that too when the washing has not been to the extent of forming a gully.

Mr. F. G. Ruffin, of Albemarle, said that he could not speak positively of the necessity of hill-side ditches to a soil with which he was not familiar. But in Albemarle he thought they were considered evidences of bad farming. The soil upon which he resided, the South-West Mountain, was not only peculiarly porous in texture, but it rested upon a substratum of broken and decomposing rock, and there was ample evidence of the percolation of water to considerable depths through both the surface and the substratum—not only in rail road cuts and other excavations, where a deposit of mud between the seams of the rock had been found at a depth of eighteen feet from the surface, but also in the bold wet-weather springs, which rose after heavy rains at the foot of the hills, not unfrequently in hard trodden roads, in streams as large as one's arm.

There were some portions of this land where the soil was too deep for the most favorable action of this kind, but in those, as in the variety of other soils in Albemarle, even on the steepest hill-sides, he had never seen ditches resorted to. Deep ploughing was considered sufficient for all ordinary rains, and those that would not be absorbed by the greater depth, and consequent greater sponginess, of the soil, would break any ditches that would be compatible with cultivation of the land. He had seen rains in Albemarle, almost water-spouts, that did great damage to the hills; one, in particular, upon a portion of a field of his own, from the effects of

which the land had not recovered in fourteen years. But a mill-dam would not have stood against it, much less a ditch bank.

In laying off corn rows, it was usual, there to lead the furrows by a gentle grade to the depressions on the face of the slope, into which they emptied; and as those depressions were frequent, the furrows were rarely long. It was not thought good management to make them long, as the current of water was thereby increased in volume, and more soil was moved.

After what he had heard to-day from gentlemen of greater age and experience than himself, especially from those who had changed their opinions on this subject, he would not presume to say that ditches were unnecessary in Amelia and Powhatan; but still he thought that a longer rotation, which would give a turf upon the land, and that turf subverted to a depth of seven or eight inches for corn, the ploughing to be finished by or before Christmas, so as to kill or cripple the bore worms, and pulverize the soil by the winter frosts, would go far to obviate the necessity of these ditches.

In answer to questions put by some of the members, Mr. R. said—The hills in Albemarle were not steeper than he had seen in Amelia and Powhatan, but there were many more of them, and they were longer; could not say that he perceived much difference in the general texture of the soils; the South-West Mountain lands, though remarkably adhesive, were thought rather too light and open for first-rate wheat lands; the soil on Fighting Creek* reminded him a good deal of some of the soils on Ivy Creek, in Albemarle; there he had known a field of Mr. Garth's, a part of it which was in oats, so riddled by rain, shortly after the crop was seeded that he had re-ploughed and re-seeded the whole of it; but Mr. Garth never used hill-side ditches. The Ivy Creek lands were light, easily worked, with a good deal of sand in them, and were considered first-rate tobacco lands.

Mr. Charles Selden, of Powhatan, said that after what had already been stated by others, it would be useless for him to offer any argument in favor of hill-side ditches. He would be content to state his decided approbation of their use, and his concurrence with what had been said as to their advantages, both to prevent the washing away of soil and to aid its improvement. The abuses of the system, and their ill consequences, he did not consider to be reasons against the proper use.

As to the labor and cost of construction, each farmer must decide that for himself, and according to the circumstances of his land. If, deeming the theory correct, and the application to his land proper, a beginner should take for trial a piece of ground the most subject to injury from washing, and make the required ditches, according to the directions stated in the earlier part of this discussion. He would add to these directions what he deemed an important part of his own practice. In the first ploughing out the ditches, he found two good plough-furrows enough for the highest seventy yards of each ditch. For the next seventy, as the rain-water flows downward and increases in volume, three furrows' width is given to the ditch,—and so on, an additional furrow's width is given for every additional seventy yards' length of the ditch, to its place of discharge.

The graduated ditches or their banks are not an

* Dr. John B. Harvie's farm, on which the meeting of the Club that day was held. E. R.

impediment to ploughing around the hill, which is the general practice in Mr. Selden's neighborhood. The omitting to plough thus, when breaking up the field, would lose one of the most convenient means for keeping the ditches in order. It is only necessary to raise the point of the plough when it is cutting across or along a bank, so as to go shallow, and to cut up the weeds and briars, without disturbing the foundation of the bank. After being thus ploughed, the running the plough for one or two furrows along and in the bottom of the ditch, to loosen the earth and break the roots of anything that has grown therein, will leave the ground ready for scraping out the ditches with hoes, and put the ditches and banks in order. They will rarely fail to answer a good purpose for the succeeding rotation of crops, without being liable to fill up or break, if managed as directed.

Mr. S. said it had been argued that the washing away of the finer and more fertile parts of the soil (which was more or less done on all hilly lands,) was not a loss, as what was thus removed from the upper part was deposited at the foot of the hill. In answer, he would say, that if there had been no such washing, the land at or near the top of the slopes would have continued as fertile as at the foot. He thinks more injury is done to the flat lands lying under hills, by there being deposited there barren sand and clay washed from the bottoms of gullies and other denuded and barren sub-soil on the hill-sides above, than the benefit received from the muddy water bringing and depositing the richest and finest parts of the soil.

He could not say how far the objection applied to hill-side ditches making the small streams more liable to overflow. But as the water from rains would pass along greater distances, and at less speed, before reaching the streams below, he thought this objection could not apply to a proper and judicious system.

It had been stated that graduated ditches would not answer for steep slopes. He thought there were very few hill-sides in that neighborhood so steep as to forbid their use. He had these ditches on two hills, as steep as any in the neighborhood, and it was known that the plan answered well there. It is certainly true, that a steep hill-side will require the ditches to be more frequent, or nearer together, than more gentle slopes. And thus it may be, that on a very steep slope, the ditches and their banks might occupy a large proportion of the whole surface at that place, and have cost more labor for their construction and preservation than such particular spot would be worth for cultivation. But this did not prevent such ditches being effective for such steeper ground, or the work there being made to suit with and in aid of the general plan for the whole field.

Mr. Edmund Ruffin, of Hanover, said that it had been intimated in this discussion, and he knew it was a common opinion of many residents of this upper country, that the lands of the tide water region were so nearly level that the washing of hill-sides was there but a small evil. It is true; that much of the land near the sea-coast is very level and low. But in the higher half of this region, lying nearer to the falls of the rivers, the high lands bordering the rivers and their small tributary streams, have many hill-sides much steeper than any of this upper country; and for miles back from the rivers, many of the farms are as hilly as in this neighborhood, and as much need care to prevent destructive washing away of the soil, as any lands

whatever. Still, he did not believe that this plan for prevention, which had undoubtedly been so beneficial hereabout, could be advantageously adopted (or but in few cases of peculiar shape of surface) on the high and hilly lands of tide water. Formerly, as Editor of the Farmers' Register, and in the first volumes of that work especially, he had done much to gather and diffuse information on this subject. He believes that to his thus eliciting information, especially from the pens of Messrs. James C. Bruce of Halifax, Richard G. Gaines of Charlotte, and N. F. Cabell of Nelson, the agricultural public is indebted for the first publication and diffusion of instruction on this important subject. But his own practical experience is so limited, that it would not be worth mentioning, except that the statement is due to candor, and to this occasion. On the high and hilly farm in Prince George county, formerly owned by Mr. R., and then, as now, under the direction of the present proprietor, Edmund Ruffin, Jr., a field was laid off, and guard-furrows made, carefully and well, according to the then received directions and best lights. But, in obedience to the views then deemed best, the descent given to the furrows was only one inch in twelve feet. According to the later views stated here to-day, this error alone was enough to ensure failure. In addition—the field had been recently ploughed flush, (for corn,) the graduated trenches made subsequently, (by ploughs and hoes, as just described by Messrs. Harvie and Old,) and of course the banks were composed, for the most of their height, of recently moved and loose soil. Of course, there was neither the descent of the furrows necessary to conduct rain-floods, nor solidity of banks to resist their washing through. It was no wonder, that the washing of the field was made the worse, by this attempt to guard against it. In consequence, as soon as possible, the furrows were filled up, and the effort has not been renewed. But besides these particular defects, (of too little fall in the furrows, and of the newness and softness of the banks, operating in this case,) there are natural features of the hilly surfaces of the tide water lands very different from this middle region, and which would be great obstructions to the general use or efficacy of hill-side ditching. Here, the hill-sides, though high, are not often very steep, and are long and regular, or without frequent variations of direction. Those below the falls vary frequently in their rate of slope, and in the direction of the curves, which, also, are often short and abrupt. Thus, any graded line, marked for a hill-side ditch, would necessarily be very crooked, and cross many of both projecting and receding curves. The soil also, usually, and sometimes the sub-soil, is sandy; and the heavy sand washed across the intervals of tilled land, into the graded ditches, by rain-floods, would soon make obstructions, cause the water to over-top and break across the adjoining bank, which, because of its loose, sandy texture, would be totally unfit to resist being washed through and down to its foundation.

Very lately, when in South Carolina, he had conversed on this subject with some intelligent planters of the upper part of that State, and of middle Georgia, in reference to scenes which he had previously seen. Edward Palmer, Esq. of Fairfield District, South Carolina, and the Hon. William C. Dawson of Greensborough, Georgia, and others, stated that the use of guard-trenches, on their hilly lands, had been found an improvement of inestimable value. This practice in Georgia has been found, wherever used, to be the greatest possible safeguard

against the generally disastrous effects of the heavy rains of that climate falling on the sloping lands. Mr. R. said that such results might have been anticipated there. The fields in middle Georgia, are kept almost continually under tilled or hoe-crops, and mostly of cotton, which latter culture requires the soil to be kept always clean and well pulverized. The very frequent ploughing, and always shallow, (which is so much the worse for washing,) the general or entire absence of broad-cast or untilled crops, and there being no grass crops, or formation of sod, in the short intervals between the tilled crops—all must dispose the hilly lands of the more Southern States to be much more damaged by being washed, than most well-managed lands in either middle or lower Virginia, which have but one tilled crop, (tobacco or corn,) in a rotation of four, five, or six years. Of course, the benefits of guard-ditches must be much greater on those cotton lands than even in this hilly region, where their operation is found to be so greatly beneficial.

With his slight practical experience, Mr. R. said it became him to speak diffidently. But, from all that he had this day heard from good practical farmers, whose experience and opinions deserved high respect, as well as from his previous observations, he arrived at conclusions differing from those of both the thorough approvers and opposers of this practice. He entirely concurred in the belief of the great benefits so obtained. But he thought that under like conditions of soil, surface, and rains, and also of judicious construction, the benefits of guard-ditches will be the greater in proportion to the extent or prevalence of the following conditions, viz. frequency of the occurrence of tillage crops, the more perfect and long-continued pulverization of the soil, (as for cotton or tobacco,) and especially the practice of shallow ploughing—the infrequency of broad-cast crops, as wheat, peas, (as a manuring crop,) and still more of the land remaining at rest, and not grazed, under grass, or weeds, or even in the less safe state of pasture. The reverse of all these conditions, and especially with the deep ploughing under of much vegetable matter, would render less necessary, and less profitable, the use of graduated trenches; and perhaps, (as had been stated by Mr. Cocker,) in cases of highly enriched lands, under broad-cast crops and grass most generally, the benefits of this practice may be less than its cost. Thus, undoubtedly beneficial and valuable as this improvement is generally, its use seems to indicate a transition state of agriculture; presenting, truly, evidence of great progress achieved in judicious improvement, but of a mode of improvement which will be hereafter the less practiced (where now in use,) in proportion to the nearer approach to the highest condition of improved culture and fertilization.

It had been remarked in this discussion that the lime-stone mountain lands did not wash because of the open fissures of the underlying lime-stone, which served as under-draining, and drew down the excess of rain-water from the surface. It is true, that there is some mechanical effect of this kind, and, in some cases, operating even to an injurious extent on lime-stone land. He had learned from the late J. Sampson, Esq., that in his vegetable garden grounds at the Red Sweet Springs, he had attempted, and without success, the irrigating the crops, because the water carried on, sunk so rapidly through the open texture of the soil, and the still more open fissured rock below. But, besides this mechanical operation, (and which is the same,

though less in degree, in the peculiar South-West Mountain lands, adverted to by Mr. F. G. Ruffin in his remarks,) Mr. R. thought that the well-known less liability of hilly calcareous lands to be washed by rain-floods was more generally owing to their *chemical* than to their *mechanical* constitution. No persons had such good opportunity to know the fact and to judge of the cause, of this greater exemption, as those farmers, who, like himself, had marled or limed land of previously the worst character for being easily and hopelessly (as then supposed) damaged by washing. The addition of lime to soil, before greatly deficient in that necessary ingredient, gives greater mutual attraction and adhesiveness to all the different parts, so as to resist their easy separation and removal of any one part by rain-floods. He would not occupy more time by digressing on this particular branch of the subject. But there is no question that calcareous soils, whether natural or made so artificially, are much less liable to be damaged by being washed.

For the Southern Planter.

**ON IMPROVING OR ENRICHING POOR LAND—
WHETHER NATURALLY POOR OR NATURALLY RICH,
OR GOOD—AND SUBSEQUENTLY EXHAUSTED BY
SEVERE CROPPING.**

BY WILLIAM H. HARRISON.

It seems to me that in commencing the work of agricultural improvement a preliminary step should be to take a general and thorough survey of the soil of the farm to be improved. My object in doing this would be to ascertain whether from the similarity of the soil of the different portions the same rotation of crops would be applicable to the whole; or whether, as often happens, from the diverse character of the several parts, a varied rotation would be advisable. The fact being established that there is sufficient uniformity of soil to make it expedient to embrace the whole area of cultivable land in a general system, the next step should be to consider the amount of labor to be employed on the farm; also taking into the account the degree of poverty of the soil, in order to determine the proper rotation of crops. If the force is an adequate one, and the land only moderately poor, let the farm be divided into five fields, and let the rotation be corn, wheat, clover, wheat, pasture. If, on the other hand, the force is weak, and the land excessively poor, I would recommend a more extended rotation, and would divide the farm into six or seven fields. The six field rotation would be, corn, peas or rye, wheat, clover, wheat, pasture. The seven field system would only vary from this in allowing the clover field to remain unbroken for two years.

It being a well known fact that the value of both calcareous and putrescent manures is greatly diminished, if not wholly lost, when applied to lands that are sobbed by water, the next thing to be done should be to establish the most thorough system of drainage over the whole of the arable surface that requires it.

It is undoubtedly a great advantage to the farmer to have his fields enclosed, but the expediency of doing it or not must be determined by the circumstances of the case. If fences around the fields are to be dispensed with, a standing pasture, of at least half the size of one of the fields, should be

enclosed; and be it remembered that the worst land on the farm for cultivation is often the best for this purpose. Without such a pasture it would be very difficult and very troublesome to subsist the requisite number of cattle and sheep for the uses of the farm. I am by no means one of those who consider the conversion of the refuse matters of a farm into manure, by the agency of animals, as a useless process; on the contrary, I have been surprised, indeed I may say shocked, to hear the affirmative of that proposition maintained by some of our farmers who are highly skilful in other respects, on the ground that no addition is made to the mass, and in truth, that the quantity is considerably diminished by undergoing the process. This is one of the many fallacies propagated by the agricultural chemists; and if my memory serves me rightly, the idea was first started by Sir Humphrey Davy. Great names, however, cannot consecrate great errors, though for a time they often give them wide currency. The food of man is often very much diminished, both in bulk and weight, by undergoing the process of cooking, and yet who believes it to be less nutritious on that account? May not a due preparation of the food of plants also add to its efficacy? I think it may, and from my experience, does.

May I here say, and be pardoned for saying, what has long been my opinion in regard to the true basis of the science of agriculture—that the practice of skilful men engaged in agriculture, in other words, the experience of experienced and sagacious men, whose time and talents are devoted to the subject and that only, is the true basis of that science. My gorge has often risen to see agricultural chemistry wrongfully made the corner stone of the stately edifice. That chemistry may and does occasionally make discoveries that practical men are daily turning to great advantage, is not to be denied. She is a potent auxiliary, and to this point her just claims extend, but no farther. In the highly interesting and beautiful agricultural address delivered by the Hon. William C. Rives, on a recent occasion at Saratoga, in New York, I was very much gratified to see this same opinion strongly maintained, on the authority of a Mr. Pusey, who is represented to be one of the foremost agricultural writers of England. Having proceeded to a division of the farm into five fields, let one of them be well ploughed for corn, taking care to penetrate as deep as the nature of the soil will permit, without mixing too much of the dead subsoil with the surface earth. On soils accessible to lime, and on which it acts well, let a handsome dressing be applied, varying from thirty-five to one hundred bushels, according to the capacity of the soil to bear it. I would prefer using lime to marl, of the ordinary sort, at the outset, unless the marl was very easy of access, and very rich in calcareous matter, because the work of calking can be carried on so much more expeditiously, from the fact that a much less quantity of lime will have the desired effect, and that the requisite quantity of calcareous matter, therefore, can be so much more easily transported in that shape. It seems to me, too, that from the slight causticity of lime, not too much slackened by either air or water, a more immediate effect is obtained than from calcareous matter in the milder and more effete shape of marl. Lime, when brought even from the Hudson to James river, loose in the hold of a vessel, is found to act much more happily, when applied, without unnecessary exposure to rain and air, as soon as it is landed. I would

also give the corn field a dressing of about 200 lbs. of guano to the acre at the time it receives the second ploughing, say when the corn is about twelve inches high; and at the last ploughing would lay it down in peas, sowing a bushel to the acre. My object in doing this would be to procure a good seed bed for the ensuing crop of wheat, and at the same time be adding to the vegetable matter in the soil. Clover must be sown on this field the spring after it goes in wheat. During the winter and spring another field must be ploughed up and limed; and after giving it 100 lbs. of guano to the acre, let it be laid down in peas, as a preparation for wheat; and when the wheat is sown let the dose of guano be repeated. Go on in this way through the entire rotation, using clover and plaster, and making and applying on the clover field all the putrescent manures possible. I am in the habit of collecting during the winter, and scattering over my farm pens, all the ashes I can lay my hands on. It will be well, perhaps, to adopt this plan, which certainly improves the mass of manure very much.

Under the six and seven field systems it would be necessary the first year to break up and lime three fields; the corn field to receive a dressing of guano, as under the five field system, but not to go in peas till the second year. The other two fields should be served as above, sowing guano and peas as a preparation for wheat. One of these fields must be sown in clover the spring after it has been laid down in wheat. This course of improvement should be continued on all the fields in proper order until, by the due use of lime or marl, and putrescent manures, the crops of clover become sufficiently heavy to justify the abandonment of the use of guano on the clover fallow.

The corn field under these systems (the six and seven field) may be laid down in rye in August or September, instead of reserving it for a pea fallow the next year, and a very rough harrowing would suffice to cover it. Let it be fed to hogs as it stands, when mature. It is stated on high authority that rye, used in this way, is very much relied on as an improver in Ohio. I think, though, I should myself prefer the pea fallow as a preparation for wheat, for the obvious reason that a scattering of rye would almost inevitably be found in the crop of wheat that followed.

As I told an old friend and former manager of mine, some time ago, who now cultivates a farm of his own, labor is so high now-a-days that no one can afford to make bad crops, and the magic of guano must be resorted to when other means fail. It must be admitted, however, to be a most expensive manure.

Whatever opinions I may once have held in regard to the expediency of making small applications of lime, after an accumulated experience of many years since that time, I am now in favor of repeated and large doses on lands that will bear it, and as an agent in improvement I estimate lime far more highly than guano, at the price we have to pay for it. Guano may be used to great advantage on poor lands, and on lands not accessible to calcareous manures, and not improvable by them, and on plantations on which large crops of tobacco are grown. I know it is a controverted proposition, but my observation, backed by an actual experience of more than ten years, leads me to the conclusion that that crop is rather inimical to a high state of agricultural improvement, when full crops are aimed at. This arises from the fact that it ex-

acts so much labor in its culture and preparation for market. Hence the great value of guano to the tobacco grower, whose hands are so much trammelled during the winter months—the season generally devoted to improvement by farmers. It may at least be doubted whether guano can be used profitably on lands well improved by lime and the putrescent manures of the farm, and producing clover kindly. In the last thirty years we have not had three as fine seasons for wheat in succession as the last three, and there is no manner of doubt that guano has been credited with much that is due to the seasons. It is a remark that is often made that guano has put the poor and the rich lands very much on the same level. Any reflecting person, however, who will make the right calculations, will soon see that the gap between them is very wide still. Take a farm of five fields, and suppose by the application, annually, of 200 lbs. of guano per acre to the corn field and one wheat field, at a cost of \$50 per ton of 2000 lbs. the same result is obtained that a neighbor gets on land that cost \$30 per acre; and so on to the end of time. It is perfectly clear that the guano is an annual tax of \$2 per acre on the whole arable surface, in the case above stated. This is the interest on \$33 $\frac{1}{3}$, and of course a capitalist had better purchase good land at \$30 per acre than incur this annual expense. It must be borne in mind, too, that the poor land is worth something, the value of which should be an element in the calculation. It will be contended, however, that the guano, though an evanescent manure, does leave some improvement; and this is undeniably true. I admit, too, that it increases the means of making putrescent manures. The superior advantages, however, of good land in producing clover and other grasses, in the profits arising therefrom, would, in my opinion, be a fair and full offset to all this. There is a good deal of land, though, in Virginia that I doubt not, in the value of all the crops raised upon it in a series of years, would more than double the product of poor land, when fructified, as above, by guano. I leave it to others to calculate the value of such land upon these data. It must certainly be worth considerably over \$60 per acre, if the above reasoning is correct.

An old farmer, well known to me, jocosely remarked, some time ago, that he felt, when a guano man vaunted of his crops of wheat, and did not state the outlay in guano, that he was taking an undue advantage of his fellow-farmers. There seems to be some show of reason in it, too, when one refers to the fleeting nature of the manure, and reflects that it enters so largely, as an item, into the cost of production of the crop. The old fellow admitted that he sometimes used guano himself, but he said it was always with the feeling, or something approaching it, that an old sportsman would experience when caught in the act of poaching partridges.

There is only one subject more that I wish to touch upon, and I am done. The most defective feature of our Virginia management, in my judgment, is our neglect (for I plead guilty myself when arraigned on this charge) to use the proper means in making and collecting all the manure possible on our farms, and preparing it in the best way, and in preserving it from waste till applied to the land. On my lands, well prepared manures applied on clover, produce much better and heavier crops, both of that grass and of grain, when broken up, than straw alone. This seems to contravene the

shade theory of that most worthy gentleman, Dr. Robert Baldwin, of Winchester. My way of accounting for the effect of shade on land is this: When shaded by any substance, neither soluble nor putrescent, it becomes friable and mellow to a very great depth, as is admitted on all hands, producing that very state of the soil that was aimed at by Jethro Tull in his celebrated mode of culture, and which, by-the-by, is said, for a time, to have produced most remarkable results. Tull rejected the use of manures, and relied on breaking the land very deep, and preparing the soil for the reception of crops by the most perfect and thorough pulverization. In both of these cases, as I take it, the earth is stimulated to do its utmost by the potent agency of heat and moisture in decomposing all the inert vegetable matter and any other substances capable of decomposition, to be found in the soil; and I cannot doubt that either system, long continued, without a fresh supply of vegetable matter in some shape, (and both systems reject the use of it, as unnecessary,) would end in producing utter and hopeless sterility on any ordinary lands. There may be soils, so constituted as to bear such treatment, but I have no knowledge of them, except from books. When putrescent or soluble matters are used as a covering for the land I can very well see how the land receives direct and very essential benefit otherwise than upon the shade principle.

The late Fielding Lewis, Esq. of Charles City, who as an agriculturist was greatly in advance of his age, and who had the honor, as I believe, to be the first farmer in Virginia who used lime successfully as a manure, used to say that a horse, properly littered, would compensate, very nearly, if not fully, for the grain used by him, in the manure thus made. The annual loss to Virginia in the neglect of this matter of making manures, is immense; but there is a spirit of improvement abroad which, I trust, is destined to make our dear old State blossom as the rose. *Vireat semper, semper floreat.*

For the Southern Planter.

QUAKER MANAGEMENT OF DAIRY COWS,

REARING CALVES, AND FATTENING HOGS.

Mr. Editor,—Thinking the following, written to me by a member of the society of Friends, contains much both interesting and instructive, I enclose it to you for publication in the Planter.

Respectfully yours,
D. H. HATTON,
Nansemond County, Va.

Respected Friend,—Having duly received a letter from you requesting a detail of the minutia of our dairy husbandry, &c., &c., I now proceed, at this, my earliest opportunity, to reply.

And 1st. Of the feeding and general treatment of our milk cows in winter. As the habits of our community are industrial, we rise at half past five o'clock in winter, and, that chores may be done, and all things ready for business, our herdsman rises at half past four o'clock and feeds the stock with hay, cleanses stalls and prepares for milking, which is performed at six o'clock. At eight o'clock they are messed, giving one peck of beets, carrots, or potatoes, and two quarts of wheat bran or shorts to each cow, wet to a swill. At nine o'clock they are again fed with hay, also at twelve, and three, and seven o'clock in the evening. About half past

four o'clock, P. M., they are again messed, as in the morning; if less roots are given, more bran is added, to the amount of four quarts per mess.

Our winter milch cows are watered in the stall, morning and evening all they will drink; for this purpose, water is brought into the stalls by aqueducts, which much facilitates the labor of watering. The cows watered in stall are only turned out when the weather is pleasant and warm, and then not for much length of time; for, we deem it a great object to keep them warm; and to facilitate this, our stables occupy the basement of our barns, which are made of stone, neatly laid, and plastered and whitewashed inside, to make them sweet, light and clean. Twice per week our cows receive, just before watering, two table spoonfuls of fine salt per head, in winter, and a little more when on grass.

We feed cabbage, turnips, &c. freely, and to prevent the taste in the milk and butter, we put one quart of boiling water to ten quarts of new milk, when it is set for cream. We have learned that in seven or eight hours from the time of feeding the above articles, milk will taste badly, consequently care is taken to inform the dairy woman whenever these articles are fed. The water thus applied, renders the milk and butter perfectly sweet and good.

In summer we seldom milk but twice each day, at five o'clock, A. M. and half past six, P. M. In all points mentioned we are very regular and precise, for which we have clocks in our stables.

2. Of rearing calves. All calves intended to be raised are weaned at four weeks old, and fed by hand, except bulls, or some special breeders, which we generally put on a poor cow for the season—when commencing to feed by hand, we only give about four quarts of new milk for the first four days; for the second four days, we add half morning's milk to night's, or vice versa: at eight days feed milk twenty-four hours old, continuing this through the season, increasing the quantity to six quarts, and taking the milk even when skimmed at the ordinary time, finding they do better than not to have it at all. By degrees a little bran is added to the milk, in order to learn them to eat it. When learned, they are fed about one pint each, per day, together with roots and hay at pleasure. They at all times have free access to water, which is brought to their stall by aqueduct. Calves fed on milk need water.

3. Of the feeding of fattening hogs. At present we do not keep them; when we did do so, their food was all cooked, except their swill from the dairy and kitchen. They were regularly fed three times each day, giving them on an average about eight quarts of corn per head, per day; that is, for the last four weeks before slaughter, in which time no swill or roots are fed: the object of this is, to harden the pork; perhaps it would not be very profitable to feed in this way for market. The whole period of fattening was about three months; the first eight weeks potatoes, pumpkins, squashes, &c., &c., are cooked and put with the cooked meal; the meal being cooked by itself requires a longer time to cook; they are fed of this mixture all they will eat three times each day. Our hogs used to average about 500 lbs. for a drove of fifty or more—they have averaged as high as 600. It is the decided opinion of some of our best herdsmen, that, since all we can have of a hog is carcass, the sooner this is obtained, the better; of course we feed all they will eat of fattening material as above from birth till slaughter. Others think they will arrive at about the same size by common food for

store hogs. But one thing our experience justifies, and that is, that a pig may be made to attain three times the weight in the first six months of its existence by rich and plentiful feed, that it will by the common method.

Yours truly, G. B. A.

To D. H. HATTON, *Nansemond county, Va.*

From the Journal of Agriculture.

IS AMMONIA THE SOLVENT OF SILEX IN THE SOIL?

BY LEVI BARTLETT, WARNER, N. H.

Mr. Harris, in his review of "Theories Examined and Explained," advances the idea that it is ammonia, and not potash and soda, that is the agent for rendering soluble the silica—a substance so necessary for giving stamina or stiffness to the straw of wheat, stems of corn and other cereals.

In the October number of the *Genesee Farmer* he says: "We know that the amount of ammonia brought to an acre of land each year, by rain and snow, is much more than a crop of wheat ever contains; but where is the evidence that in the growth of the plant there is not a destruction of ammonia? Mr. Lawes contends that there is such a destruction, and demonstrated it by his experiments; that, in fact for every pound of ammonia organized in the wheat plant, there is at least five pounds of ammonia used by the plant in the performance of its functions. Mr. Lawes did not clearly perceive how and for what purpose this destruction took place, but was, nevertheless, convinced of the fact. Recently the experiments of Prof. Way render it exceedingly probable that ammonia is used as the solvent and vehicle for carrying silicic acid to the plant, and *evaporating* when the silica is deposited; just as water is known to do in depositing the elements of plants. Chemists have always had a difficulty in accounting for the manner in which silica was conveyed to the plant; the theory being that it was as a soluble salt of potash or soda; and the patent of Professor Liebig was for manufacturing this soluble silicate of potash, &c.; but from the fact that this patented manure has failed to increase the wheat crop, not only in England, but in Germany, under the immediate superintendence of Liebig himself, it is more than probable that silica is not taken up as a silicate of potash. Admit the opinion of Professor Way, and we can account for the benefit of summer fallow on heavy soils—for the manner in which silica is deposited—and for the fact, that in the growth of wheat there is an immense destruction of ammonia, as there

would also be in the growth of all the cereals and other plants containing a large percentage of silica. Will Mr. B. examine and explain this theory, not from what we say about it, but from the article itself, published in the last Journal of the Royal Agricultural Society of England?"

Not having had the perusal of the Journal here spoken of, I cannot express my opinion of "this theory" as *there advocated*. But judging from observation and well known facts, I think the probabilities are altogether in favor of the "potash theory;" though there is no question but that ammonia—a volatile alkali—like the fixed ones, potash and soda, does possess solvent powers; and that it may act on siliceous and other mineral substances in the soil, and in some degree render them soluble. If ammonia is the agent that renders the siliceous—the comminuted particles of the white flint, or quartz rock—soluble, so that it may be taken up by the plant, thereby giving the stems sufficient strength to preserve their upright posture; then we might always expect to find the stiffest straw and grasses, where the ammonia most abounds. On the other hand, where ammonia *least* abounds, we should expect to find the weakest and most lodged straw and grass. But all experience and observation prove the exact reverse of this, as can be vouched by hundreds of observing persons in the Granite State.

Many a barn is so situated, that the wash from the yard strays over a portion of the mowing land; the grass upon which is rank and succulent, in the early season, before the proper time for cutting; but it lodges badly, and made into hay, it is exceedingly light in weight, in proportion to its bulk. It contains too much organic, and is deficient in inorganic or mineral matter. There is an excess of ammonia in the soil, derived from the wash of the barn-yard. But according to this new theory, the herdsgrass on such land, instead of being prostrated ere it is fully headed out, ought to stand up stiff as cane poles.

The effect of ammonia on plants is to induce luxuriant stems and foliage, as is the case with grass in the immediate vicinity of manure heaps. By a sufficient application of sand and wood ashes the evil is corrected, in a good degree, and the grass is prevented from lodging.

Many of our farmers are in the habit of carting out their manure in the autumn, and depositing it in large heaps on the inverted sod, where corn is to be planted the following season. In the spring, these heaps are subdivided into smaller heaps, placed over the field at suitable distances from each other, then spread and harrowed in. The ground is then planted.

Next season the land is ploughed, and sown with wheat; and on these spots where the dung lay in heaps, the grain almost invariably lodges; the straw is rusty or mildewed, and the kernel shrunk. Now these bad effects are caused by excess of ammonia in the soil, where the heaps of manure lay through the winter. I presume there is also a larger amount of soluble mineral matter in the soil, where the heaps were, than on the other portions of the land. But, according to Mr. Lawes' experiments, any amount, *great or small*, of mineral matter does not affect the wheat crop. This over luxuriance is due to excess of ammonia; but, according to the theory under consideration, this same ammonia should prepare soluble silica so abundantly, that the crop in lieu of being prostrated by its own weight, ought to stand up as "stiff as a poker!"

Others of our farmers plough their sward land in the fall, or spring; cart on from their barn cellars forty or fifty loads per acre of this strong green manure, rich in ammonia; work it in with harrow or cultivator, and then plant with corn. The crop ranges from fifty to seventy-five bushels. Now is there not a much larger *destruction* of ammonia in this crop of corn than in a crop of thirty bushels of wheat? There is undoubtedly a much larger amount of silica in the stalks, leaves and cobs of the corn than there is in the straw and kernel of the wheat.

Admit the *theories* which Mr. Harris is advocating, to be true, and the conclusion is inevitable that our farmers are working wrong end foremost. If they wish to raise a large crop of wheat, they should sow their *green manured land* with wheat, instead of first planting with corn, as the amount of ammonia is vastly greater than it will be the succeeding season; and, ammonia being the solvent of silica, there will be an abundant supply in the soil to prevent the prostration of the wheat! Beautiful, however, as may be the theories of Mr. H. our farmers will be slow in adopting them; they will for the present let the corn crop precede the wheat.

I have seen hundreds of crops of rye and wheat on burnt land, most of them heavy, and scarce ever saw one lodged. A few years ago, a farmer in this town, felled, in the month of June, the trees on an acre and a half of land. In August they were burned; and, the season being very dry, the fire made a clean sweep of every thing except the bodies of the largest trees; these were cut up and piled and burned. The ashes were spread, seed sown, and all harrowed in. Next summer, the yield was sixty-six bushels, or forty-four bushels to the acre.

Much of the standing grain was seven feet high, and none of it lodged. In the process of burning, all the ammonia in the wood was driven off; that in the soil, to a certain depth, was also expelled, and the rains which followed, dissolved the potash contained in the hundreds of bushels of ashes. This potash set free much of this ammonia in the soil; for wood ashes contain the very alkalies which the chemist uses in his analysis to separate the ammonia from the other substances with which it is in combination.

In the above named case there was a most abundant supply of potash, and apparently a scarcity of ammonia. Which of the two substances was the "solvent and vehicle" for supplying the enormous quantity of silica required for this large product of straw and grain? Common sense, if interrogated, would answer the probability is all on the side of the "potash theory."

On the banks of our rivers and smaller streams we find the alluvial to the depth of several feet made up almost entirely of silicious sand, upon which is annually grown a fair crop of red-top grass. This, when properly cured, has the appearance of being the very first quality of fodder. But when fed to cattle in the winter they reject it, and nothing but extreme hunger will tempt them to eat it. The rejection is owing to the great amount of gritty or silicious matter contained in the texture of the stems and leaves. The soil, or alluvial, forming the immediate banks of the streams are made up of sand, which mostly consists of particles of quartz, felspar and mica. The two last contain silicates of potash and soda. In the dry, hot weather of summer there is a rapid evaporation of water from the depths of the lower soil. This, as it rises through the porous sand, dissolves the potash in the felspar and mica. The potash, in turn, renders soluble the silica, which being abundant, the grass takes up so large a quantity, that it is rendered hard and wiry, thus making it difficult for the cattle to masticate it, while at the same time it is innutritious and tasteless for lack of a due proportion of organic matter—of *nitrogen*, in particular.

There can be no question but that ammonia freely applied to such soil, would not only add to the growth of the grass, but vastly add to its nutritive qualities. Professor Way has shown by his experiments that sand does not possess the power of fixing the salts and gases of manures; and, by the same rule, it does not possess the faculty of fixing the ammonia that fall in the rains. But, admitting Mr. H.'s position, these embankments ought to contain the

greatest amount of ammonia in order to afford so abundant a supply of soluble silica!

In the case above cited (and the facts can be proved by hundreds of our farmers) the chances are again altogether in favor of the "potash theory."

In Silliman's Journal for July, 1852, I find a paper on the analysis and character of the soil in the Scioto Valley, Ohio, by David Wells, of Cambridge, Massachusetts. He examined a soil which "has been cultivated fifty-one years; forty-five crops of corn and two or three of wheat have been taken off from it: it has also been a few years in grass or clover. It has scarcely diminished in fertility, and now, with the most ordinary culture, yields, on an average, one year with another, eighty bushels of corn to the acre," and all this without manuring. What an amount of ammonia must have been fixed in the fodder and grain of these fifty-one years cropping? And for every pound of ammonia fixed in the plant there was a *destruction*—so says this new theory—of at least five pounds of ammonia! It strikes one that this soil must have originally contained more ammonia than Dr. Krocke ever talked about; and that the rains must have annually brought down to each acre more than Liebig ever dreamed of. Will Mr. Harris explain this matter? Will he inform us from what source or sources this inexhaustible supply of ammonia has been derived?

The scouring rush (gun-bright) and mares-tail (equisetum) are plants that grow most luxuriantly in wet, silicious or sandy soils. The plants, when mature, dry, and carefully burned, leave from eighteen to twenty per cent. of ash, mostly silica. How much ammonia does it require to dissolve and convey twenty pounds silica from the soil into these plants? Mr. Lawes, in some of his experimental plots of ground, applied at the same time 300 pounds of potash, 200 pounds of soda and 150 pounds, each of sulphate and muriate of ammonia. Potash and soda are each stronger alkalies, and possess much greater solvent powers over organic or inorganic matter, than ammonia. Now did the wheat plant take from the soil only such silica as was dissolved by the ammonia, and reject that dissolved by the potash and soda? Did it make use of the ammonia only as the "vehicle" for conveying from the soil all the silica required by the plant? If so, it must be confessed the wheat plant possesses very nice discriminating powers, indeed!

As a scientific and practical question, these different theories have much interest, but should the "new theory" prove the true one, it will also prove that Liebig, Johnson, Norton, Jack-

son, Dr. Lee and many others of the best scientific writers on agriculture have long been groping in "pitchy darkness" in this particular matter.

From the Providence Journal.

RANCID BUTTER.

BY OWEN MASON.

"A French scientific journal states that it has been ascertained by frequent experiments that the bad smell and taste of butter may be entirely removed by working it over in water mixed with chloride of lime. The discovery was made by a Brussels farmer, whose practice is to take a sufficient quantity of pure cold water to work it in, and put into it from twenty-five to thirty drops of chloride of lime for every ten pounds of butter. When it has been worked until the whole has been brought in contact with the water, it should be worked again in pure water, when it will be found to be as sweet as when originally made. The experiment can easily be tried, and we commend it to our citizens who are driven to the necessity of buying rancid butter, or of using none.

Another effectual mode of renovating butter is said to be, to churn it over with milk until the old salt and bad taste are all removed, and then work it over and salt it afresh. We find the above in the *Syracuse Star*, and think it may be worth a trial."

The above article has been extensively copied into agricultural as well as political newspapers. We have tried both of the methods described, as well as some of our own, and have found them all utterly ineffectual for the renovation of butter that has once become rancid. The best disposition to be made of such butter is to put it into the receptacle for soap grease. Anything so offensive, to all but those of the coarsest taste, must be unwholesome.

Pure butter, that is salted with pure salt, may be kept for years without becoming rancid; this we know to be a fact, and butter makers would do well to inform themselves of all the causes productive of rancidity, or any other quality that interferes with its preservation or injures its flavor and relish.

In an editorial article of the *Journal*, some weeks since, almost all the poor butter was charged to the want of skill or attention on the part of the dairy women. A correspondent, whose communication is rather too long for publication, comes up to the defence of this useful class of the community, and attributes

nearly all the poor butter to the neglect of farmers in providing suitable places for the keeping of milk and butter. A short essay, by one of the best judges in the State, was published in the transactions of the Rhode Island Society for Encouragement of Domestic Industry, and in pamphlets for general distribution, in which the author, while he does not overlook the circumstances influencing the quality of butter noticed by the *Journal* and its correspondent, points out several others, and very comprehensively the means of avoiding them.

That writer considers that the use of *impure salt*, from Liverpool and Onondaga, is one of the most common causes of that rancidity and bitterness that characterize, in a greater or less degree, by far the greatest portion of the butter brought hither from New York.

That the quality of butter made in New York has constantly deteriorated, from whatever cause, we think is undeniable. Time was when there was no difficulty in procuring a prime article, and "Goshen butter" had a reputation equal to the best products of our own dairies; but of the butter for winter use, sold in this market during the past two years, three-fifths would be branded as *grease* in England, and it deserves no better name any where.

The exorbitant prices it has commanded for some time past seems to have produced a perfect recklessness in regard to its quality, both on the part of the makers of it and the large dealers, and the market has at length become glutted with the execrable stuff. We wish no greater punishment to them than that they should be compelled to eat the article with which they hoped to grease the throats of their customers at the rate of thirty cents per pound. Good butter is both a necessary and a luxury, and it constitutes a most important item in the disposable products of the farm; the whole community are therefore interested in having all the causes investigated and exposed which contribute to the deterioration of its quality, and the authorities of New York are specially interested in ascertaining what portion of the mass of bad butter, sent from that State, is fairly attributable to the employment of impure salt. We have seen many analyses of the New York salt, some purporting to have been made by authority, and all representing it of the purest kind. That the purest salt may be made from the brine springs of Onondaga there is no doubt, and yet it is difficult to find commercial samples, even of that which is sold under the name of "dairy salt," in which the presence of lime, magnesia, and sulphuric acid may not be detected by the

appropriate tests, showing contaminations of two or more of the following articles, viz. epsom and glaubers salt, sulphate of lime, and the chlorides of calcium and magnesium—precisely such ingredients as a chemist would prescribe with which to make bitter butter.

Very recently, at our suggestion, a friend has subjected to chemical examination every variety of salt to be found in this market. Among the six or eight varieties examined, that from Syracuse, called dairy salt, was the most impure, while the purest variety was that from St. Martin's, as prepared and ground by Messrs. Sweet & Angell.

The term "rock salt," though erroneously applied, is meant, *in this vicinity*, to designate the clean, coarsely crystallized article, produced by solar evaporation, and imported from the West India Islands. The very best samples of this salt are always procured by our most skilful butter makers, by whom it is carefully washed, dried and pounded or ground very fine. If carefully selected and thus prepared, it is generally sufficiently pure for the purpose. If any doubt of its purity exist, it may be determined by the following process. If distilled water cannot easily be procured, collect some rain water as it falls, in a clean earthen pan, (not from the roof,) and in it dissolve a portion of the salt. Take half a gill of the solution and add to it three or four tea-spoonfuls of a solution of *carbonate of soda*, and boil in a glass dish or a well tinned vessel a few moments, then pour into a tumbler. If the solution become milky, and a white sediment form, the presence of lime or magnesia, or both, is certain. Into a wine glass of another portion of the solution, put drop by drop, a solution of *chloride of barium*, and if the liquid become milky and a white precipitate form, the presence of sulphuric acid is certain. Salt upon which these tests produce these effects is unfit for butter making. If, however, the solutions show only a very slight milky tinge, as when a drop of milk is added to a wine glass of water, the foreign contaminations are not in such quantity as to materially injure the salt. These tests are easily applied, inexpensive, and sufficiently decisive for practical purposes. The carbonate of soda and chloride of barium can be procured of any scientific apothecary.

We commend the essay alluded to above to those who are engaged in butter making. Copies can be obtained of the Secretary of the Rhode Island Society for the Encouragement of Domestic Industry.

FRAUD IN BUTTER MAKING.—The recent exposures that have been made of the adulteration and *manufacture* of milk in New York,

are so disgusting in their details, that we should suppose an inhabitant of that city could hardly look at a milk pot without a sensation of nausea. It would seem, from the following article, that similar practices are resorted to in the making of butter, but we defy the most ingenious rascality to make, of whatever materials, a worse article than is now often sold in the market:

"The *Boston Herald*, in an article on this subject, says unprincipled speculators have been, and are still at work adulterating butter prepared for the market—though the blame is generally thrown on the dairies. From evidence that has come to our knowledge, says the *Boston Herald*, we are persuaded that this adulteration is extensively practised. A correspondent who has purchased and tested the base article, writes as follows: 'A new fraud appears to have been discovered in butter making. The fraud is this: The butter maker adds a substance which appears to be of a vegetable nature to the real butter. A dealer, of whom I purchased a few lumps, told me that the express-man who delivered the butter to him from Greenfield, acknowledged that when they churn the cream, it is now an almost universal custom to put *rennet into the butter-milk*, to turn it to a cheese, and so work it with the butter for market, increasing the quantity about thirty per cent. I discovered the fraud by melting the butter in the oven, and found that a substance equal to one-third the original weight was left. The person of whom I purchased the butter says that this fraud is very extensively practised, especially for the New York market.'

COCHIN CHINAS—A LONDON STORY.

"Rara avis in terris."

"Oh, Willie, dear, before you go, I want a favor!"

"Well, what is it now?" said Willie, in a gruff, good tempered sort of way, as if he was rather used to hearing of these "favors."—Willie was an *officier de dragons*, six foot three, with a great yellow, well twisted moustache, and looking altogether just what he was—"a swell," and a gentleman.

"What is it now?" asked Willie.

"Oh, please then, don't be angry, but I've heard so much about them—and before you leave town, I should like it so much—you can get them in town, I know; and I only want one, just one, you know?"

"No, I don't know, you know—come, out with it, Polly—what is it?"

"Well, then—here whisper—I want a Cochin China, please, sir."

WOOL DEPOT IN RICHMOND.

We congratulate the wool growers of this State that there is at last a depot in Richmond for the sale of their wool, and that it is in such good hands as those of the Messrs. Crenshaw.

These gentlemen are not without much experience in the sale of wool, having been for a long time the consignees of a large amount of the trade of South-Western Virginia, of which wool is one of the leading staples. But they have, as will be seen, obtained the services of Mr. Waterhouse, a very skilful wool stapler, who was so long in the employ of the late woollen factory of this City.

At the North these wool depots have been found indispensable, and there are a good many of them. We think that every word said of them in the advertisement of the Messrs. Crenshaw is strictly true, and that they deserve the encouragement of the agricultural community for their enterprise.

Read their advertisement and give them a trial.

NEW BOOKS.

We have received from A. Morris "The American Form Book," containing legally approved precedents for agreements, arbitrations, assignments, bonds, wills, deeds, &c., by Benjamin Tate, Counsellor at Law—a new edition—edited by Alexander H. Sands, Counsellor at Law, containing, in addition to the original work, forms of deeds of bargain and sale, lease, trust and release under the Code of Virginia; also forms of attachments under the same; mode of holding to bail under acts of 1851 and 1852, and other forms, valuable to clerks, attorneys, notaries, justices and sheriffs; prepared by the Editor, with a complete index. Price, with the new Constitution prefixed, \$1 50, without it \$1 25.

This is a useful book to the farmer and magistrate, and we do not well see how either can get along without something of the sort.

We have also received from J. W. Randolph & Co. a book, lately published in New York, entitled *Farm Implements*, and the principles of their construction and use, an elementary and familiar treatise on mechanics, and on natural philosophy generally, as applied to the ordinary practices of agriculture, with 200 engraved illustrations, by John J. Thomas.

This is a book which we think every farmer ought to possess and study. It embodies the leading principles of natural philosophy in their more common application to the practices of modern approved farming—principles, without a correct knowledge of which, no man can thresh wheat, cut it by machinery, plough his land, or perform any the simplest piece of work on his farm to advantage. Thirty years ago, when the labor of the

farm was more a matter of thews and sinews, it mattered not so much if a man was entirely ignorant of the correct principles of machinery. A knowledge derived from practice or long observation of the capacity to endure in the horse and the laborer was all that was necessary. But now a better time has come upon us, and the true secret of operation in agriculture, as in all other useful works, is to economize in the expenditures of labor, and with nothing like as much fatigue as it formerly took to do the work of one man to make a machine do the work of five men for each horse employed, or a still greater amount where steam is used. This secret the work before us attempts to teach, and from it the reflecting mind will learn much directly, and much more from its own suggestions. We very cordially commend it to the young farmer, who often learns more from his own mistakes than from the conservatism of older men.

We have also received from an unknown hand a book entitled "*The Modern Horse Doctor*," by Dr. George H. Dadd, of Boston. We do not think that he teaches any thing that is not better taught by Porcival and Youatt. We rather incline to the opinion that most that is good in his book has been borrowed, and most that is bad is his own.

EXPERIMENT WITH LIME.

[FROM THE PAPERS OF THE NOTTOWAY CLUB.]

Our friends, the farmers of the Nottoway Agricultural Club, have done us and the public the favor of sending, for publication in the Planter, such essays and reports of experiments and other matters of value as we can cull from them. This step is worthy of all imitation, and we trust it will be imitated by the other Clubs of the State. In that way we shall amass a store of materials of great value, by which the whole agricultural community will be greatly benefited.

In performing the duty imposed upon me by the rules of our Club, to present some annual contribution in writing to its archives, scarcely any subject of experiment or discussion has stronger and more interesting claims to notice than the properties of lime and plaster as manures. The constant terms of eulogy with which they have been pressed upon the attention of the tillers of the soil by eminent writers on agriculture, together with the undoubted success with which they have been attended in the hands of experimentalists, invest them with an interest of no common character. If the writings and successes of Edmund Ruffin and Willoughby Newton were alone known upon this subject, it would be enough to enkindle the enthusiasm of all who inherit the patrimony of pine forests and broom-sedge fields. But when, in addition to this, we see no inconsiderable portion of the State of Virginia exchanging the dreary aspect of desertion and decay for one of greenness and prosperity, and inviting to her bosom of plenty the children who had

forsaken her in poverty, and all through the wondrous agency of calcareous manures, what inquiry is more fraught with interest for us than the one, whether we are in a position to derive those advantages from them which they have bestowed upon others?

It was under such a view of this subject that I determined to attempt some satisfactory solution of the question, whether my own land, at least, was susceptible to the peculiar influence of these agents? I had experimented before, in a different location, with oyster-shell lime, with very discouraging results, it must be confessed. But my mind was not thoroughly satisfied of the inefficiency of calcareous manures upon the soil of this, our middle region of Virginia. And although the soil of my first experiment might have been considered peculiarly favorable for such an experiment, inasmuch as it was fresh pine land and well supplied with humus or the organic remains of vegetable life, still I desired to subject the proposed investigation to a thorough test: no less than this—whether lime and plaster, in liberal application to a naked and barren soil, would manifest a beneficial operation? Accordingly, I selected for experiment a plot of land of very inferior quality, supposed to be something less than an acre in extent. It was old land, of an argillaceous or clayey texture, which had been exposed to heavy grazing, and was covered with a very considerable quantity of vegetable matter. Poverty-grass, persimmon and blackberry bushes were the growth most congenial with its nature.

On the 7th of May, 1853, six or seven tierces of Thomaston lime, partially air-slacked, were applied to one-half of the above plot of land, say, at the rate of about seventy-five bushels of slacked lime to the acre, allowing five bushels of slacked lime to the tierce. The whole piece was afterwards broken up with the plough; and on the 19th of May one bushel of plaster of Paris was applied to nearly the entire portion which had been dressed with lime. On the same day with the last application, each half was planted with corn and cultivated in pretty much the same mode throughout the growth of the crop. On the 1st day of July, after a very dry June, and in less than two months from the planting, the growth of corn upon the dressed half presented more size and vigor, under similar circumstances, than upon the other. On the 1st day of August, after a very wet July, a considerable superiority was still manifested by the same part, and to the end was this superiority maintained. So evident and decided was the effect of my experiment that I did not consider it worth while to be very minute and exact in estimating the comparative results upon the dressed and undressed portions of land. I suppose the applications made were productive of scarcely less than one hundred per cent. increase of the crop. I doubt, however, whether the difference would have been so great if the experiment had been conducted upon land of greatly superior quality.

The result of this experiment is very gratifying to my feelings, as it convinces me that the mineral manures are not perfectly inert upon our lands—and, moreover, they seem to have a directly fertilizing effect upon the soil, independently of, or in addition to, any indirect agencies which they may possess through the medium of organic textures, or otherwise. The profit, however, derived from their use in this case has not so far been at all commensurate with the outlay. The supposed gain

and loss in this experiment may be thus stated at the rate, per acre,	
15 tierces Thomaston lime, (75 bushels slacked,)	
at \$1 25, - - - - -	\$18 75
2½ bushels of plaster, - - - - -	1 25
	\$20 00
1 acre of dressed land—produce	\$4 00
1 acre of undressed land—produce	2 00
	2 00

Loss, (not including freight, &c.) \$18 00

The increased value of the land, produced by such an application, I cannot undertake at present to calculate. Neither am I prepared to say with how much less cost the same amount of gain may have been attained. But the simple knowledge of the energy of calcareous manures upon the soil of the middle region is a triumph of which I am proud.

Another interesting feature in this experiment is the apparently direct action of mineral manures upon vegetable growth. Some authorities upon this point are calculated to encourage the idea that minerals enter the field as a sort of Generalissimo of the forces of vegetation, and expend their influence in separating and combining, in modelling and marshalling them for action, without themselves immediately sharing in the conflict, or, if the illustration be more apposite, as a Drum Major, with his music, or the Quarter Master, with his spirit rations, to stimulate the inert and tardy forces of the fruitful humus to energy and duty. Boussingault says, "Ashes, gypsum or lime, spread upon barren land, would not improve it in any sensible degree." But he continues, "Azotized organic matter, absolutely void of saline or earthy substances, would probably produce no better effect; it is the admixture of these two classes of principles, which constitutes the normal manure that is indispensable to the improvement of soils," seeming thus to identify the two classes of manures in their action. But what does he mean when he classes mineral manures with stimulants, and says: "It must still be admitted that we are far from understanding exactly in what way they act." Mr. William C. Rives used lime at the rate of 80 bushels (slacked measure) to the acre. He says: "Some accounts which I had read of its effects elsewhere, not expressed with the accuracy and discrimination so much to be desired in such communications, had led me to expect a decided effect from it upon the growing crop—by which I mean the crop of either corn or wheat, immediately succeeding the application of the lime. In this I was disappointed." He goes on to remark: "My first disappointment, however, in regard to the effects on the growing crop, was more than compensated by the marked, unequivocal and decided effect, I have never failed to perceive from the lime *alone* in the *clover* succeeding the wheat crop—with which it has been my general practice to apply the lime at the time of seeding, harrowing in the lime and wheat at one and the same operation." By the way, the same gentleman's experiments were confined mostly to a close, gravelly loam, of a brownish or gray color, and he quotes the proverb,

"He that marls sand
Will soon buy land,
But he that marls clay
Throws all away."

But in my experience the truth of the proverb

is not verified. Dr. Blatterman, former Professor in the University of Virginia, says: "The chief beneficial purpose served by lime is its chemical action upon the organic matter of the soil—an action which proceeds slowly and imperceptibly, but which causes the organic matter itself ultimately to disappear, and after it has thus disappeared, fresh additions of lime produce no farther effect." But he qualifies and explains himself thus: "The beneficial effects of lime are particularly apparent, even on the first crop, after its application to such land as, from the great accumulation of acids of organic origin in it, had been rendered incapable of bearing a crop of any useful plant—such land cannot, with propriety, be called sterile, for it will bring spontaneously a tolerable crop of sheep sorrel, a better still of broomsedge, cinque-foil and hen's nest grass, nay, even a very luxuriant crop of pines." Another writer says, "A raw potato is not only a very nauseous but a very unwholesome food. It contains properties almost poisonous to man. But cook it—the heat changes these properties and it becomes a delicious and nourishing dish. In this way mineral manures, such as lime, plaster, ashes and salt chiefly work." From such sentiments and statements as the foregoing, it would not be very unreasonable to expect an application of mineral substances alone to our poorest lands to be unattended by any very immediate and decisive effects—at least with us, who are prone to think that one of the grand sources of poverty in our lands, is the want of organic remains in them, which we are continually endeavoring to supply by means of the various putrescent manures. Unless, then, we adopt the seeming paradox of Dr. Blatterman, that our poor lands are not, properly speaking, *sterile*, and do yet contain much organic nutriment for plants, though in a state of inertness, until, by some process or other, it is made effective by mineral manures, is it not fair to presume, from the experiment detailed above, that these latter substances may act as direct fertilizing agents to land as well as those of an organic nature?

Respectfully submitted,

GEORGE FITZGERALD.

Nottoway, Jan. 19, 1854.

TOMATO CATSUP.

The following recipe for this pleasant and valuable condiment has been handed us by a gentleman who has tried it and says it will do. As he knows what is good as well as most people, we give it without hesitation to the *cooking* public:

"One gallon skinned tomatoes, four table-spoonfuls of black pepper, four table-spoonfuls of salt, three table-spoonfuls of mustard, one table-spoonful of allspice, eight pods of red pepper. Contents ground *fine*, simmered slowly in vinegar in a bell-metal kettle three or four hours and strained through a wire sieve and bottled close. So much vinegar is to be used as to leave half a gallon of liquor when the process is over."

TO CLEAN BRASS.—Rub it over with a bit of flannel dipped in sweet oil; then rub it hard with finely powdered rotten stone, then rub it with a soft linen cloth, and polish with a bit of wash-leather.

CATTLE DISTEMPER.

Editor of Southern Planter.—In perusing the essay of W. S. Morton, of Cumberland, on the "Diseases of Cattle," in the last number of the Planter, I was reminded of some circumstances of this disease that occurred here some few years ago that seemed strongly to confirm some of the conclusions arrived at in that essay. Some years ago a connexion of mine, from Ohio, took a drove of horses to Baltimore, and sold them there. He then procured a drove of mules and conveyed them to the southern part of this State, in Southampton or the adjacent counties, and there disposed of them. And being willing to trade wherever he went, and knowing that the graziers of this county were not fully supplied with cattle the fall before (this being early in the spring,) he bought a drove of the small cattle of that region and brought them into Loudoun and sold them. It being before pasture was plenty, he brought them to my barn-yard and fed them with hay until they were sold. During the summer almost every individual who bought cattle out of this drove had the disease introduced among his own stock, though not one of the southern cattle died with it. So that it seems that infected cattle grazing on grass will communicate the disease to healthy cattle that graze on the same grass. I only bought one, a heifer that had a calf while here, and my milch cows passed daily through the barn-yard where these cattle were, but they did not feed with them, and none of my cattle were attacked with the disease. Some of my neighbors lost about half a dozen cattle more valuable than any they purchased out of this drove. These southern cattle fattened kindly, but did not increase much in size; and were another drove to come here from that region, I question very much whether our farmers would, from their present experience, suffer them to enter their enclosures at all, much less to purchase any; they would have nothing to do with them. The disease has not appeared since that season.

YARDLEY TAYLOR.

Loudoun County, Va., 7th mo. 21st, 1854.

P. S.—The weather lately here has been very hot and dry; our corn is suffering very much and pastures drying up. Our wheat crop is large—the earlier ripened grain is good, but the late is somewhat injured with the rust. Y. T.

For the Southern Planter.

SHADE TO DESTROY WIRE GRASS.

Mr. Editor.—I was reminded by your July number of my intention to inform you of the fact, that *shade* will destroy wire grass and prevent its extension. In 1840 my family spent the winter in Georgia, and found the wire grass used as a yard grass, and prevented from extending merely by laying logs around the circumference of the yard. It has existed for forty years in a field adjoining one of my own, and has not extended into my field, separated only by a common rail fence and a slight hedge-row. The field in which it is has not been cultivated for many years, and wherever it has grown up in bushes and shrubs the wire grass has almost entirely disappeared. It has existed for the last ten years in another field of the same neighbor on one side of a common crooked rail fence, without any hedge-row, and has not penetrated at all

into the adjoining field. There can be no doubt that the shade of the fence alone has prevented its extension, showing that it will not grow in the shade. I have no doubt it can be eradicated by a cover of leaves, straw or any other material which will shade the land for a single summer.

SILAS BLOW.

Appomattox, July 10, 1854.

JOINT WORM CONVENTION.

At a Convention of farmers held at Warrenton, Fauquier county, Virginia, on Tuesday the 13th of July, for the purpose of taking some action with regard to the ravages of the joint worm, James K. Marshall, Esq. was chosen President, and R. W. N. Noland, Esq. appointed Secretary.

On motion, a committee of twelve was appointed to draught resolutions expressive of the views of the Convention. After due consultation, a set of resolutions were reported to the Convention, by the Chairman, Dr. R. E. Peyton. As amended, they read as follows:

1. *Resolved*, That, in the opinion of this Convention, the successful culture of the wheat crop is of the greatest importance to the prosperity of the Piedmont and Valley sections of Virginia, whether we view it as it respects the interests of the farmer, or of our commercial towns, or of our rail roads.

2. *Resolved*, That the injury done to the wheat in the sections of the State, above named, by the ravages of the joint worm, is so serious and extensive that it may well excite the deep concern of all interested; and that from past experience we have reason to fear that unless something be done to destroy or check the progress of said insect, we shall in a few years be compelled to abandon, for a time at least, the culture of wheat altogether.

3. *Resolved*, That in view of the heavy loss that would be sustained by the abandonment of said crop, and the impossibility of immediately adopting any substitute in its place, we deem it of the utmost importance to ascertain some effectual remedy for the evil above named; and that if one can be found we consider it the duty of every man in the community zealously to carry it into practice.

4. *Resolved*, That, in our opinion, the following course is the best adapted to prevent the immediate ravages of said worm, and ultimately to destroy it altogether:

1. To prepare well the land intended for wheat, and to sow it early in the earliest and most thrifty and hardy varieties, and do nothing calculated to retard the ripening.

2. To use guano, or some other fertilizer, liberally; and to use it always when seeding corn land or stubble.

3. To burn the stubble on every field of wheat, rye or oats, and all thickets and other harbors of vegetable growth contiguous to the crop; and we furthermore recommend our farmers to sow their crops in as large bodies and in compact forms as is practicable; and, if possible, that neighbors arrange amongst themselves to sow adjoining fields in wheat the same year.

4. To feed all the wheat straw or other that may be infested, in racks or pens, or on confined spots, and in April to burn all the remains. Also, on or before the first day of May, to burn carefully all the straw that has not been fed.

5. *Resolved*, That we will, all of us here present,

exert ourselves to have this plan carried into operation in our respective neighborhoods.

6. *Resolved*, That whilst we deem it our duty to use all the means in our power to rid the country of this pest, we do so with a sincere acknowledgment of our dependence upon Divine Providence, with an humble petition for his blessing, and with submission to his will.

Mr. Carter offered the following resolution, which was unanimously adopted:

Resolved, That a committee be appointed in each magisterial district, with power to add to their number, whose duty it shall be to visit the farmers in said district, and to persuade all residing therein to consent to adopt the plan of burning the stubble, &c. and to superintend the process.

The Convention then adjourned.

JAMES K. MARSHALL, *President*.

R. W. N. NOLAND, *Secretary*.

Among the speakers on the occasion were Messrs. John Hill Carter, R. W. N. Noland, R. E. Peyton, James F. Jones, Richard Payne, J. Q. Marr, Winter Payne, and others. A good deal of debate arose upon the question of the recommendation of guano as an anti-joint worm fertilizer. Mr. Lane, of Rapahannock, stated that he had found Mapes' fertilizer equal to Peruvian guano, on his farm.

A FEW WORDS ON CONFECTIONERY.

RATAFIA CREAM.—Boil three or four laurel leaves in one pint of cream; strain it: when cold, add the yolks of three eggs beaten and strained, sweeten it, put in a very little brandy, scald it till thick, stirring it all the time.

ORANGE CREAM.—Squeeze the juice of three or four Seville oranges to the rind of one; put it over the fire with nearly a pint of thin cream; take out the peel before the cream becomes bitter. When the cream has been boiled and is cold, put to it the yolks of four eggs, the whites of three, beaten and strained; sugar to taste; scald it, stirring all the time till thick enough.

BLANCHED CREAM.—Take a quart of the thickest cream that can be got; sweeten it with fine sugar and orange-flower water; boil it, and beat the whites of twenty eggs with a little cold cream; strain it, and when the cream is upon the boil, pour in the eggs, stirring it well till it comes to a thick curd; then take it up and strain it again through a hair sieve, beat it well with a spoon till it is cold, and put into a dish.

BURNT CREAM.—Make a rich custard without sugar, boil in it some lemon-peel; when cold, sift sugar over it, and burn the top with a salamander.

SWEETMEAT CREAM.—Take some cream and slice some preserved peaches into it; (apricots or plums, if preferred,) sweeten the cream with

fine sugar, or the syrup the fruit was preserved in; mix all well, and put it into glasses.

LEMON CREAM.—A large spoonful of brandy, six ounces of loaf sugar powdered, the peel and juice of two lemons, the peel to be grated. Mix these ingredients well together in a bowl; then add a pint of cream, and whisk it up.

BARLEY CREAM.—Two pounds of lean veal, a quarter of a pound of pearl barley, boiled in a quart of water very slowly till it becomes the consistence of cream, which should be passed through a fine sieve, and all salted to your taste.

POMPADOUR CREAM.—Beat the whites of six eggs to a froth with one spoonful of brandy; sweeten it; stir it over the fire three or four minutes; pour it into a dish; melted butter or cream (boiling) over it.

RHENISH CREAM.—Boil one ounce and a half of isinglass in a pint of water. Strain it through a sieve, and add eight eggs well beaten, half a pint of Rhenish or other white wine, the juice of two lemons, and the peel of the same, grated with as much pounded loaf sugar as may suit the taste. Let them boil all together, very slowly, until the mixture is of the consistence of custard; then strain it through thin muslin into china cups. It will not turn so well out of anything else as out of china.

ICE CREAM.—Sweeten the cream; put it into a tin for the purpose, with a close cover; set it into a tub of ice that is broken to pieces; with a good quantity of salt; when the cream thickens round the edge, stir it, let it stand as before till of a proper thickness, turn it out, first dipping the tin in cold water; it must stand in the ice four or five hours.

SWISS CREAM.—A pint of cream, sweetened to your taste, and the peel of a lemon, to be set over a slow fire till it boils; the juice of a small lemon and a little flour beaten up with it, to be mixed with the cream, and let it boil a few minutes longer; then strain through a sieve. Lay your cake in the dish, and pour the cream upon it. It should be made the day before it is wanted.

CHERRY ICE CREAM.—Take half a pound of preserved cherries, pound them, stones and all; put them into a basin, with one gill of syrup, the juice of a lemon, and a pint of cream; pass it through a sieve, and freeze it as usual.

BLANC MANGE.—To one quart of milk add one glass of isinglass, a quarter of a pound of sugar, a quarter of an ounce of cinnamon, a little grated nutmeg, half the peel of a lemon, and a bay leaf; simmer over a slow fire, stirring it till the isinglass is dissolved; pass it

through a napkin into a basin, and pour into a mould. This can be made of any color or flavor that will not curdle the milk; the milk of bitter almonds may be added to flavor it. Soyer recommends Arney's blanc mange powder as being excellent.

JAUNE MANGE.—Dissolve one ounce and a half of isinglass in a pint and a half of water, add to it one pint of white wine, the yolks of eight eggs, and the juice of three lemons; boil the peels in the liquor, beat the eggs with the juice of the lemons, sweeten to your taste; boil it all together, strain it, and put it into moulds.

JACQUE MANGE.—To two ounces of isinglass add a pint of water, dissolve it over the fire, and add the rind of two large lemons, grated. When it has boiled a little, put in a pint of white wine, then the yolks of eight eggs thoroughly beaten, the juice of two lemons, and sugar to taste. The eggs, lemon juice, and sugar should be previously mixed together with a small quantity of the wine. Add the whole together, and keep stirring it one way until it boils. Then strain through muslin, and pour into cups or moulds that have been well rinsed in cold water.—*German town Telegraph.*

MILK-PANS—SOILING COWS.

Some experiments made in Germany for the purpose of ascertaining what kind of material is best for milk-pans, resulted as follows:

Tinned milk-pans.....	7.07	Hanover lbs. butter.
Glass	7.04	“ “ “
Wooden “ (not painted).....	6.96	“ “ “
Earthen ware	6.92	“ “ “
Wooden “ (painted).....	6.67	“ “ “

In connection with the above experiments others were made in relation to feeding cows, from which it appeared that there was required for one pound of butter—

Of milk produced by stall-feed- ing with green clover,.....	15.00	Hanover qts. milk.
With green tare and clover,...	15.67	“ “ “
By pasturing,.....	12.84	“ “ “

This shows that the cows gave the richest milk on pasture. But the difference in the quality was probably owing to a difference in the kind of food eaten by the cows, and not to the manner of feeding. The pastures, it is presumed, contained grasses instead of clover—the former, as many dairymen know, being best for the production of butter.—*Boston Cultivator.*

SHIPMENTS OF PRODUCE.

On the 3d July the New York mail steamer Roanoke received on board, at Smith's wharf, Norfolk, 2270 barrels, principally potatoes, 470 baskets and 26 boxes tomatoes. On the 4th, the Jamestown took in 1500 barrels, and being full, could receive no more. On last Saturday, 1800 barrels potatoes, &c., and 600 baskets tomatoes were shipped to New

York by the Roanoke. The Philadelphia steamer received about 800 barrels of potatoes, principally. The Baltimore steamers take away, says the Argus, about 800 barrels daily.

HOW TO KEEP GATHERED FRUIT AND FLOWERS ALWAYS FRESH.—A friend has just informed us that fruit and flowers may be preserved from decay and fading, by immersing them in a solution of gum-arabic in water two or three times, waiting a sufficient time between each immersion to allow the gum to dry. This process covers the surface of the fruit with a thin coating of the gum, which is entirely impervious to the air, and thus prevents the decay of the fruit, or the withering of the flower. Our friend has roses thus preserved which have all the beauty of freshly plucked ones, though they have been separated from the parent stem since June last. To insure success in experiments of this kind, it should be borne in mind that the whole surface must be completely covered; for if the air only gains entrance at a pin-hole, the labor will all be lost. In preserving specimens of fruit, particular care should be taken to cover the stem, end and all, with the gum. A good way is to wind a thread of silk about the stem, and then sink it slowly in the solution, which should not be so strong as to leave a particle of the gum undissolved. The gum is so perfectly transparent, that you can with difficulty detect its presence, except by the touch. Here we have another simple method of fixing the fleeting beauty of nature, and surrounding ourselves ever with those objects which do most elevate the mind, refine the taste, and purify the heart.—*Country Gentleman.*

WEIGHT OF SEASONED WOOD.

The following table shows the weight of a cord of seasoned wood:

White ash	3450 lbs.
Beach	3236 lbs.
Chestnut	2333 lbs.
White elm	2592 lbs.
Scaly bark hickory	4469 lbs.
Pig nut hickory	4241 lbs.
Red heart hickory	3705 lbs.
Iron wood	3218 lbs.
Hard maple	2878 lbs.
Soft maple	2668 lbs.
White oak	3821 lbs.
Pin oak	3339 lbs.
Red oak	3254 lbs.
Chestnut oak	3030 lbs.
Pine	1900 lbs.
Lombardy poplar	1774 lbs.

REMEDY FOR TOOTHACHE.—The London Lancet, which is considered good authority in such matters, states that a mixture of two parts of the liquid ammonia of commerce with one of some simple tincture, is recommended as a remedy for toothache, so often uncontrollable. A piece of lint is dipped into this mixture, and then introduced into the carious tooth, which immediately stops the pain. It is stated to be eminently successful, and in some cases is supposed to act by neutralizing an acid product in the decayed tooth.

PAYMENTS TO THE SOUTHERN PLANTER

To the 25th of July, 1854.

Estate of Capt. Wm. Kidd to Jan. 1855	\$1 00
James P. Anderson to January 1855	2 00
Matthew White to June 1854	1 00
John Noble to January 1855	6 00
S. Edmunds to January 1855	6 00
A. W. Burruss to July 1855	1 00
Robert A. Hill to January 1855	2 00
C. J. Thompson to July 1855	77
William Hankins, Sr. to July 1855	77
Franklin Minor to July 1855	3 00
Nelson Talley to January 1855	1 00
John S. Adams to January 1855	1 00
M. B. Carrington to January 1855	1 00
Samuel E. Lee to January 1855	1 00
James M. Stout to July 1855	1 00
Dr. W. J. Harris to January 1855	1 00
James H. Ferguson to January 1855	1 00
Corbin Warwick to July 1855	1 00
James E. Tucker to July 1855	1 00
Goodrich Wilson to May 1855	2 00
S. P. Ryland to January 1855	1 00
H. St. George Harris to July 1854	1 00
John W. Bowles to July 1855	1 00
J. H. Etheridge to January 1856	2 00
Dr. William Meredith to July 1855	1 00
Carter H. Page to July 1855	1 00
Lewis Bailey to January 1855	1 00
Robert Daniel to April 1855	2 00
Joseph N. Goodman to April 1855	1 00
George A. Fleet to July 1855	3 00
Major George Wilson to January 1856	1 00
Fendall Chiles to January 1855	1 00
Dr. Enos F. Gunter to January 1855	1 00
John H. Bibb to January 1855	1 00
William H. Jones to January 1855	1 00
William J. Shumate to September 1854	2 00
Samuel M. Teel to January 1855	1 00
Thomas Garland to July 1854	1 00
B. T. Brown to July 1854	1 00
J. E. Smith to January 1855	1 00
G. W. Macon to July 1855	1 00
W. H. Southall to July 1854	2 00
P. H. Goodloe to July 1854	1 00
J. Warwick Woods to January 1855	1 00
Willis M. White to September 1855	2 00
Robert Pollard to January 1855	1 00
C. P. McKennie to April 1855	1 00
R. T. W. Duke to September 1854	1 00
William Ross to January 1855	1 00
John A. Thompson to July 1854	2 00
Robert Lucas, Jr. to July 1854	1 25
Richard Callaway to January 1855	1 00
Peter Quarles to January 1855	1 00
E. W. Burruss to July 1854	2 00
Albert Quisenbury to July 1855	1 00
H. M. Dickinson to July 1855	1 00
James A. Walker to July 1855	1 00
Robert S. Bonham to January 1855	2 00
George W. Houston to January 1855	5 00
H. B. Jones to January 1855	
Z. Johnson to January 1855	
J. C. Willson to January 1855	
T. H. Walker to January 1855	
Samuel Willson to January 1855	3 00
Shem Heatwool to July 1855	
Major R. P. Brown to August 1853	1 00
Dr. P. R. Berkeley to January 1855	1 00
Thomas K. Bridgeforth to May 1855	1 00
Petersburg Library to January 1854	\$1 00

George R. Rogers to July 1855	1 00
R. C. Dickinson to January 1856	2 00
William Payne, Sr. to January 1855	1 00
George W. Cabell to January 1855	1 00
James Walker to September 1854	1 00
James C. Denty to January 1855	3 00
Estate of N. C. Daniel, dec'd, to Jan. 1854	7 00
Robert B. Moorman to June 1855	1 00
R. N. Trice to January 1855	1 00
L. L. Lea to January 1855	1 00
Orris Moore to January 1855	1 00
W. Sandidge to January 1855	1 00
James Collins to June 1855	1 00
J. A. Ratliff to January 1855	1 00
William M. Parker to July 1855	1 00
G. A. Baker to June 1854	1 00
Stephen McGavock to July 1855	1 00
Dr. James E. Robertson to July 1855	1 00
Benjamin F. Akir to July 1855	1 00
Col. Thomas Brown to January 1855	1 00
Dr. George W. Briggs to January 1854	1 00
William P. Parish to January 1855	3 00
William B. Philips to January 1855	4 00
John Massie to January 1855	1 00
Edward J. Thompson to January 1855	1 00
William Calterton to January 1855	1 00
Colin Calterton to July 1854	1 00
James L. Saunders to July 1855	1 00
N. Q. Lipscomb to January 1855	1 00
Dr. James B. Rogers to January 1851	1 00
Col. W. A. Bell to July 1857	5 00
Col. Lloyd Noland to September 1854	1 00
John Morton to July 1855	1 00
Thomas J. Holley to July 1855	1 00
Andrew K. Fulton to January 1855	1 00
A. A. Clarke to September 1854	2 00
Michael Wallace to January 1854	1 00
D. H. Gordon to September 1853	1 00
Hart & Hayes to January 1855	1 00
Bryant Stevens to January 1855	1 00
W. D. Henry to January 1855	1 00
S. S. Alsop to January 1855	1 00
Dr. John R. Taylor (2 copies) to Jan. 1855	2 00
H. C. Alexander to January 1855	1 00
E. Hickerson to January 1855	1 00
Ab. Rowe to March 1855	1 00
Jos. Alsop to January 1855	1 00
Robert Garland to January 1855	1 00
W. P. Bledsoe to July 1855	1 00
William Patrick to July 1854	1 00
Robert Wilson to July 1855	1 00
Francis K. Nelson to January 1855	1 00
Dr. Charles Brown to July 1855	1 00
Erasmus Taylor to January 1855	1 00
James Law Hooft to January 1855	1 00
James W. Cook to July 1855	1 00
Dr. Andrew Field to July 1855	1 00
Dr. W. B. Price to July 1855	1 00
Hilary Harris to July 1855	1 00
Bevil G. Ross to July 1855	1 00
George Campbell to July 1856	1 00
George D. Gravely to January 1855	1 00
A. B. Davidson to January 1855	1 00

COTSWOLD BUCKS.—For sale three high grade Cotswold Bucks—one four years old, one two years, and one one year—and six Buck Lambs. The latter by my full blood Buck, purchased last fall for me by Mr. Sands, editor of the American Farmer, from Mr. Reybold, of Delaware. The lambs are from high grade Cotswold and South Down ewes. Price fifteen dollars each, deliverable at Gordonsville Depot, Orange county.

R. B. HAXALL.

Richmond, August 1, 1854. -2t

PRIME MERINO STOCK FOR SALE.—The undersigned having associated himself with Col. Philip St. Geo. Cocke, for the purpose of growing fine wool and raising choice Merino Stock, and ultimately upon a very extensive scale in both Powhatan and Brunswick counties, is now prepared to offer 75 buck lambs, old enough for delivery in September next.

These lambs are sired by three Bucks which have taken prizes in two different States of the Union. One of them took the first prize in the State of New York for two years in succession. A large number of our Ewes have been purchased from very superior northern flocks. I have on hand some good stock Bucks ready for use this fall.

I will box up and deliver for transportation, either on the James River Canal or Danville Rail Road, with proper directions for feeding and without extra charge, any stock ordered, but will in no case be responsible for accidents or losses occurring after such delivery. The cash must in all cases accompany orders.

Neither care nor expense will be spared to procure and keep up Stock of the purest and best quality; and I assure the Southern Agriculturists that it is designed to make this one of the most interesting and best wool growing and stock raising establishments in the United States.

I invite persons interested to call on me at my residence at Belmead, or to address me by letter as below.

THEODORE N. DAVISSON,
Jefferson P. O., Powhatan co., Va.

jun—4t

VALUABLE ALBEMARLE FARM FOR SALE.—The subscriber offers for sale that valuable and well known farm, the D. S., situated on the waters of Ivy Creek, 3½ miles from the University of Virginia, 4½ from Charlottesville, and immediately on the Staunton and Charlottesville Turnpike, and Virginia Central Rail Road, in one of the most beautiful sections of the State, and in a neighborhood long proverbial for its highly cultivated society, its fertile lands, its pure and abundant water and general healthfulness; also possessing the greatest facilities to the best of markets. The D. S. contains 695 acres, about one hundred acres in timber, and the balance in a fine state of improvement. It has for many years been considered one of the most productive farms in the county, producing finely all the various crops of this section. There is an abundant supply of running water in every field, and large portions of the farm could be converted into watered meadow. The improvements are good and of every variety. Being anxious to sell, terms will be made very accommodating. Address

GEO. B. STEPHENS,
Woodville Depot, Albemarle, Va.

ap—tf

WOOL! WOOL!!—Receiving, as we do, large quantities of wool for sale, we are enabled to offer inducements to manufacturers and dealers to examine our stock, and in that way can generally obtain better prices than can be had for small parcels. We solicit consignments from the Wool Growers of Virginia, with the assurance that we can obtain the very highest prices for their fleeces, and that no effort on our part will be spared to afford them satisfaction.

CRENSHAW & CO.,
North side of the Basin, Richmond, Va.

june—tf

BROWN & SHOOK, General Commission and Forwarding Merchants, corner Union and Franklin streets, Richmond, Virginia. All business carefully and promptly executed.

mar—ly

MERINO SHEEP.—The subscriber has from 50 to 75 Ewes with lambs, to dispose of. They will be sold low if application be made early. Post office, Mount Pleasant, Spottsylvania County, Virginia.

ault

D. M. WHARTON.

WM. A. BUTTERS,
BOOKSELLER AND STATIONER,

aultf No. 157 MAIN STREET, RICHMOND, VA.

PUBLIC SALE OF VALUABLE LAND.

WILL be sold on the premises, on the 30th day of August next, the tract of land on which we reside, lying on Gold Mine creek, in Louisa county, six miles north of the Court House.

This farm contains 414 acres, 280 of which are in cultivation, the balance in timber, about 50 acres being in original growth.

The cleared land is highly improved, the soil being unsurpassed for its susceptibility to improvement by means of clover, plaster, &c. Adjoining the garden is a vineyard of 4 acres, which, with good management, will yield a large quantity of superior wine.

The farm is well supplied with all the necessary out-buildings, and the dwelling house is large and well finished, containing eight rooms, besides passages and ample cellars and attic.

For further information persons may address Dr. J. L. Burruss, or Lucian Minor, Esq., Louisa Court House, Virginia.

TERMS.—One-third of the purchase money in cash; the balance in two equal payments, at one and two years, with interest.

Crops and stock will be sold at the same time.

L. J. BURRUSS,
J. L. BURRUSS,
M. E. BURRUSS,
C. M. BURRUSS.

ault

A. MORRIS, 97 Main Street, is constantly supplied with all **NEW and STANDARD AGRICULTURAL WORKS.** The subscriber respectfully invites the attention of the public to his extensive assortment of Books on Agriculture, among which may be found—

The Chemical Field Lectures for Agriculturists, by Dr. J. A. Stockhardt; translated from the German; edited with notes by James E. Teschemæher.

The Field Book of Manures, or the American Muck Book; treating of the nature, properties, &c. of all the principal manures in common use, by D. J. Brown.

The American Farm Book, or Compend of American Agriculture, being a practical treatise on soils, manures, draining, &c. and every staple product of the United States, with the best methods of planting, cultivating and preparation for market, by R. L. Allen.

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Together with many other valuable works on farming, the treatment and management of cattle, &c.

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STOVES AND FANCY IRON CASTINGS.

*Exhibited at the Virginia State Agricultural Fair,
By Messrs. Bowers, Snyder & Carter.*

THESE Gentlemen erected Works, about two years since, by which they have been extensively supplying the State with articles for which we have heretofore depended entirely upon northern foundries.

Their Cooking Stoves have given entire satisfaction to all Virginia housewives who have used them. On the door of one of these we notice a representation of a sheaf of wheat, in which the heads and even the distinct grains stand out in beautiful relief.

They exhibit a specimen of parlor stove especially worthy of notice. Its style and finish are highly ornamental. Its chief merit consists of a door designed to increase the draught of the fire, which is made to revolve vertically upon a pivot.

These manufacturers, in a modest, unpretending way, are rendering good service to the State, by developing her resources in this branch of domestic industry.

E. B. SPENCE,
H. M. SMITH,
JAMES PAE,

Committee on Household Implements.

I have sold principally, for the past two years, the stoves manufactured by Messrs. Bowers, Snyder & Carter, at the Richmond Stove Works, and have found them to give my patrons entire satisfaction, both in their operation and durability.

CHARLES D. YALE,
130, Main Street, Richmond, Virginia, Depot for
Bolton & Yale's "Caloric Air Furnace,"
jan 1854—ly

EAGLE FOUNDRY.

THE subscriber having removed to the large Foundry, just erected by him and fitted out with machinery of the latest and most approved style, is, in addition to the manufacture of Tobacco Flattening Mills, prepared to receive orders for Stationary Steam Engines, Saw and Grist Mills, Agricultural Machines, Tobacco Presses of every description, and all kinds of Iron and Brass Castings. He pledges himself to execute faithfully, and with dispatch, all work entrusted to him, and respectfully solicits a call from his friends and the public generally.

The highest cash prices paid for old cast iron, brass and copper.
PHILIP RAHM,
ja—ly Cary, between Pearl and 15th sts.

BOOKS, PIANOS, MUSIC, &c.

JAMES WOODHOUSE, Wholesale and Retail Dealer in **BOOKS, PIANO FORTES, STATIONERY, MUSIC, &c.** 139 Main St., Richmond, Virginia.

Constantly on hand, a full supply of standard **AGRICULTURAL WORKS.** oc—tf

SINTON & SONS' NURSERY, NEAR RICHMOND, VIRGINIA.

AS the season for planting has arrived, the subscribers would respectfully call the attention of their friends and the public generally, to their large and extensive collection of **FRUIT TREES**, embracing, perhaps, a selection that has not been surpassed, for the climate of Virginia, and nearly all propagated from fruit-bearing trees in their own orchard.

Catalogues, with directions for planting, may be had at William Palmer's Seed and Plough Store; at Peyton Johnston & Brother's Apothecary Store; at C. J. Sinton & Co's. Hardware Store, and at Logan Waller's Commission House, where any orders left will be punctually attended to, and letters addressed to the subscribers, Richmond, will receive prompt attention.

nov—tf **JOSEPH SINTON & SONS.**

WOOL DEPOT.

Richmond, June 22, 1854.

DEAR SIR,—Having been engaged for years past in the sale of Wool, we are fully aware of the difficulties that the Wool Growers of this State have labored under to obtain for their Wool its fair market value. For this there are two causes—one is, that in each lot of Wool, indeed in each bag of Wool, there are several grades, and each purchaser has to buy some Wool that does not answer his purposes; he could not, therefore, afford to pay the full value for an article that he did not want, and which he only bought because it was not assorted. All who are familiar with the sale of tobacco, are fully aware of the loss that the planter sustains who does not assort his tobacco. It is the same case with Wool, to a considerable extent.

Another reason is, that the receipts of Wool have been light, and so scattered that it was difficult to get together a sufficient quantity to attract the attention of purchasers. We have found this operate so strongly that we have not generally attempted to make sale of small parcels of Wool, but allowed our receipts to accumulate; and we have generally obtained from three to five cents per pound more for such large parcels than could be had for small lots. The Wool interest of Virginia is now rapidly increasing, and we think is destined, in a short time, to become an extensive trade. Already there is a sufficient quantity grown, if concentrated to one point and properly graded, to overcome, to some extent, the difficulties referred to above. We think this can be best accomplished by a well conducted Wool Depot. This city appears to be the most accessible point for a majority of the Wool Growers in Virginia.

Being already in this trade, and having an extensive acquaintance with the producers as well as the manufacturers and dealers in Wool, we have determined to open such a Depot in this city, in connection with our present business. In order to conduct it in the most satisfactory manner, we have engaged the services of Mr. JOHN WATERHOUSE, who was long and favorably known as the efficient Agent of the late Woollen Factory in this city.

All the Fleece Wool sent to us and tub washed Wool, so far as it is practicable, will be graded, and each quality put together, unless the owner prefers that his Wool should be sold alone—in that event he will so direct us.

Our charges will be—

Commission for selling, 2½ per cent.

Storage, grading, fire insurance, advertising and labor, 1 cent per lb.

We shall always sell for cash, unless we find it to the interest of the owners to sell on time. In that event, we will charge 2½ per cent. guarantee. We will be prepared to cash all such sales as soon as made, deducting the interest.

We hope the establishment of such a Depot will meet with your approval, and that we may be favored with your consignments.

Yours, most obedient,

CRENSHAW & CO.,

Grocers and Commission Merchants, North Side of the Basin, Richmond, Va.

Liberal advances will be made on consignments of Wool, when required.

C. & CO.

Genuine No. 1 Peruvian Guano always on hand, and for sale on the best terms.

autf

COTSWOLD OR NEW OXFORDSHIRE SHEEP.—

The subscriber has for sale a number of yearling Bucks of the Cotswold or New Oxfordshire breed, which he will sell at any time when called for. This flock has been bred from some of the best ever imported, and are superior to all other breeds for large carcass, heavy fleece, early maturing of constitution, and defy all competition with other breeds for profit. The clips of the two Bucks which were imported last year weighed 17 lbs. of each, of washed wool. A lot of wethers slaughtered last March averaged, alive, 308 lbs., and when dressed for market, 206½ lbs. Gentlemen are invited to call and see for themselves, or communicate by mail. Address WILLIAM REYBOLD,

au3t Marshmount, near Delaware City, Del.

PITTS' PREMIUM THRESHER, SEPARATOR AND CLEANER combined, and upon wheels, adapted to threshing and bagging wheat in the field, a few more just to hand.

H. M. SMITH.

July—2t

UNITED STATES HOTEL,

(FORMERLY UNION,)

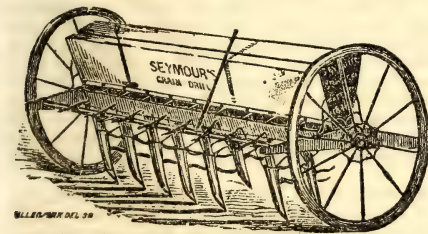
Corner of Main and Nineteenth Streets, Richmond,

J. E. NORRIS, PROPRIETOR.

Price of Board, per day, \$1 50.

mar—tf

SEYMOUR'S PATENT GRAIN DRILL.



This is emphatically the Premium Drill of our country, having taken the First Premium at every Fair of the New York State Agricultural Society, since its first introduction, in 1849, including the Highest Prize and Diploma at the great trial of Agricultural Implements made by this Society at Geneva, in July, 1852.

The machinery is remarkably simple, permanent, and easily kept in repair, and all the parts are so clearly presented to the view of the operator, that he can readily see if any thing is not correct; and the grain falls from the seed box to the tubes, (a space of several inches,) in full view, so that in passing over the field, he may be constantly assured that the seed is deposited as is designed. The usual size is made with nine teeth, eight inches apart; but

any other size, and teeth any distance apart, can be made to order. This Drill with nine teeth runs easier than some drills with only seven teeth. The teeth are all placed in one rank, unless ordered to be put in two ranks. It is believed by those who have made experiments, and given the subject their careful attention, that the evils caused by lumps, stones, &c., being thrown by the teeth in the hind rank into the furrows made by the teeth in the front rank, are, in most cases, far greater than the advantages gained. This fact has induced the inventor to construct his Double-Ranked Drill so that the teeth can all be placed in one rank, at pleasure, thus obviating, in this Drill, the objection to all other two-ranked drills. The price of the drill, with teeth in two ranks, is ten dollars higher than those with teeth in but one rank.

A valuable improvement has been made in the Drill this season, (1854,) which prevents the shrinking and swelling of the wood from affecting the correctness of its operation. This drill is made small enough to be drawn by hand for garden purposes, when ordered.

The following are the advantages this Drill possess over other grain drills, viz. It sows all grain and seeds, from peas and corn, to grass seed, as well as any other drill sows wheat, not failing thus to perform in sowing even beet or carrot seed; and it is difficult to clog it with any of the trash and foul stuff commonly found in grain, such as straw, chaff, stems of tare or other weeds. It will also sow any grain soaked and rolled in lime, plaster, ashes, guano, poudrette, &c. &c. It also sows lime, plaster, ashes, and all dry fertilizers which are fine enough to pass through the machine. Whatever it will sow in drills it will just as readily sow broadcast, by removing the drill tubes, which is very easily

done. It is remarkably simple in its construction, and very durable. It is easily understood and kept in order by common laborers, or repaired by common mechanics, such as are at hand in nearly every neighborhood or town.

The price is but little in advance of any other approved grain drill, and quite below that charged for many which are far less adapted to the wants of the farmer or planter than this—and in view of its utility, simplicity, convenience and durability, it is believed to be by far the cheapest drill in the world.

When ordered the following extras are added to the Drill: 1. A "Feeder," to prevent clogging in sowing damp plaster and other fertilizers. 2. A "Grass Seeder," which is a box and fixings for sowing grass seed broadcast, in front of the drill teeth, while drilling; or it may be used while sowing plaster broadcast from the main box. 3. A set of "Horse Hoes," to cultivate the wheat in the spring. The drill teeth are removed and these are put in their place. With these extras added, the Machine is capable of sowing grass seed, hoeing the wheat, (which also hoes in the grass seed,) and sowing plaster all at once.

Extract from the Report of the Hon. BENJ. P. JOHNSON, Secretary of the New York State Agricultural Society, who was the Agent of the State of New York, appointed to attend the Exhibition of the Industry of all Nations, held in London, 1851:

"There were various drill machines, very perfect in their construction and arrangement, yet too complicated and expensive for introduction into this country. They do not possess any material advantages over our own drills, which are afforded at one-third the price of the best English drill."

Extract of a letter from Mr. BREWER of Oneida County:

"MR. SEYMOUR: *Dear Sir*—I inquired of the Hon. Benjamin P. Johnson, Secretary of the New York State Agricultural Society, where I could get the best Grain Drill, and he directed me to you. You will, therefore, please send me one, &c."

I have used several kinds of grain drills, among which was Seymour's Drill, and I find it to be the best one I have ever seen. I have used it two seasons and it has never yet been out of repair. S. G. PATTERSON.

Marengo, Michigan, 1853.

HON. C. H. CARROLL, of Livingston County, N. Y.: *Dear Sir*—I bought of Mr. Seymour, of East Bloomfield, one of his grain drills, last season with which I sowed my wheat last fall, my barley and my oats in the spring and also drilled in a piece of corn, and in every case I found the drill to perform as I desired, doing its work as Mr. Seymour has represented it to do in his advertisements.

July, 1853.

Judge Carroll says Mr. Culbertson's word is as reliable as that of any man in the county.

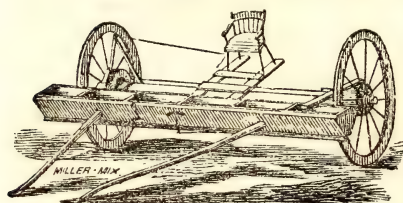
Very respectfully,
S. C. CULBERTSON.

MR. SEYMOUR: *Sir*,—With the grain drill which I purchased from you my son, a lad sixteen years of age, has put in about fifty acres of wheat for me, and with some of it about a bushel and a half per acre of ashes and hen dung was mixed, and all to my entire satisfaction, and I must say I prefer it to any I have ever seen. IRA PECK.

MR. SEYMOUR: *Dear Sir*,—The eleven-tooth drill you exhibited at the Ontario County Fair last fall, and sold to me, I have fairly tested, in putting in my spring crops, and find it works admirably, and answers my fullest expectations. I have drilled in seventy bushels of oats and as much barley, and my buckwheat, which are now up, and growing finely. Although the drill has eleven teeth, I do not think it any too large for a common team, and it is wide enough to put in three rows of corn at once. R. STEPHENS.

Hopewell, July 5, 1852.

SEYMOUR'S PATENT BROADCAST SOWING MACHINE.



This Machine is well known in Western New York, also in many other parts of the United States, and is universally acknowledged to be the best implement in our country for the purposes for which it is intended. It sows correctly all kinds of grain, (and any desired quantity per acre,) from peas to grass seed, including wheat, rye, oats, barley, buckwheat, rice, hemp, flax, clover and timothy seed; also plaster, lime, salt, ashes, bone dust, &c. &c. It is capable of dusting every inch of ground on an acre of land, with less than half a bushel of plaster, and thirty or forty bushels of lime may be thus evenly applied to the same amount of land. It sows ten feet wide, or may be made narrower to order. This machine

has been much improved by substituting iron in several important parts, in the place of wood, making it a very durable article. It has received the highest recommendations from hundreds of the best farmers in our country, and received eight premiums from Agricultural Societies, besides the Highest Prize and Diploma at the Trial of Agricultural Implements, held at Geneva, July, 1852.

The following is from the Albany Cultivator of June, 1848 by the editor, Mr. L. TUCKER: "This cut represents Seymour's Sowing Machine advertised in our last. It has been extensively used in Western New York and is much approved. We saw many acres of various kinds of grain on the farm of John Delafield, Esq., near Geneva, last season which had been sown with this machine, and we never saw grain stand more evenly on the ground. Mr. Delafield assured us that he could sow any thing—lime, plaster, poudrette, guano, &c., or any seed, from grass seed to peas, or Indian corn, with perfect exactness, graduating the quantity per acre to a pint."

MR. P. SEYMOUR: *Dear Sir*,—I have been familiar with the operation of your Broadcast Sower and your Grain Drill for some years, and justice requires me to say that I think them equal to any machines of the kind, in all respects, and far superior in the most important, viz. the manner of discharging the grain, plaster, manure, &c., from the hopper.

Yours truly,

ENOS BOUGHTON.

Those who know Mr. Boughton will put the most implicit confidence in his commendation. These machines are in use by many of the first farmers in the States of New York, Ohio, Indiana, Illinois, Missouri, Iowa, Wisconsin, Michigan, Pennsylvania, Maryland, Delaware New Jersey, Kentucky Virginia, North Carolina and Tennessee, and also in Canada, to all whom we refer for their reputation, believing that all who have given them a fair trial will commend them.

Directions for using, accompany each Machine. All communications promptly attended to.

East Bloomfield, Ontario County, New York 1854.

C. H. SEYMOUR, Manufacturer,
P. SEYMOUR, Patentee.

PRICES.—Drill with 7 teeth \$80; 9 teeth \$90; 11 teeth \$100. Broadcast Sower \$55. Extras—Feeder \$6; Horse Hoes \$2 each; Grass Seeder \$15.

aunt

FOR SALE! A BEAUTIFUL AND VALUABLE ESTATE.—Desirous to close my business in Frederick county, and remove to a central part of Virginia more convenient to a large landed estate I own in that quarter, I offer for sale, *Springdale* and *Bartonsville*, with various Mills, forming certainly one of the finest estates in the whole country. Springdale contains upwards of 800 acres of fertile land chiefly limestone, or of a kind, mixed soil, upon a clay basis, all admirably adapted to wheat, corn, timothy and clover. There are about 60 acres of creek bottom of surpassing fertility, which might be cultivated twenty years in succession with but little depreciation. Indeed, the enduring quality of the soil is a characteristic of the whole farm, justifying stubbling and repeated continuous crops. For example, I have a small field which for twelve years has been in wheat or corn, and in all that time never failed to yield a noble crop. Three or four successive crops of wheat from the same ground is a common practice with me, without injury to the land or of any abatement of quantity produced.

The improvements on this estate are those which taste and a free expenditure of money for fifty years could make. There are $6\frac{1}{2}$ miles of limestone fencing, 5 miles of paling and plank, and the balance of locust stake fencing. There are 26 enclosures from lots of 4 or 5 acres to fields of 50 acres. The wood land, 170 acres, consisting of open forests of black walnut, ash, hickory and oak, is divided in eight lots, all enclosed and yielding pasture for sheep and cattle. A fine stream flows a mile and a half through the farm, and never failing springs rise in many of the fields.

The dwelling-house is a well constructed building of two stories, covered with tin roof, having dining-room, parlor, library, six chambers, beside four cellar and three attic rooms. There is a large and handsome piazza in front and a portico in the rear. The building is 90 feet in length, including the wings, of substantial hewn, square limestone, and having eight dormer-windows. A two story stone building, 50 feet in length, used as a negro quarter. An extensive barn, with stone underpinning and shedding; excellent stabling, stone and frame, sufficient for thirty head of horses; also, houses for hay and extensive shedding for cattle; two corn houses, one rat-proof, capable of containing 1000 barrels of corn, besides granaries for wheat, oats, &c.; carriage house, ice house, admirable dairy, with a large limestone spring very convenient to the house; large stone smoke house, overseer's house, wagon and cart sheds, and other convenient out houses.

The Village consists of stone house with eight rooms, long used as a wagon stand, large stone blacksmith shop, wagon and cooper shop, several excellent buildings, occupied by mechanics, with stabling, stone smoke houses, gardens, &c.

There are two excellent and large orchards of selected summer and winter fruit, the proceeds of which I sold one year for \$1200.

The Merchant Mill is a three story building partly of stone and partly frame, capable of grinding 20,000 bushels of wheat annually. It does also a large share of country grinding, and has a valuable plaster and saw mill attached; also, near it a miller's house, stabling, garden, &c.

This property is $5\frac{1}{2}$ miles from Winchester, a flourishing town of near 5000 people, and the terminus of the rail road connecting with Baltimore. The Manassas Gap Rail Road, connecting with Alexandria, Washington and Richmond, is only 11 miles south. The projected rail road from the Manassas Gap to the Coal Field will pass only a mile from Springdale, while the Valley Rail Road from Winchester to Staunton, undoubtedly soon to be made, will touch upon the farm. The Great Valley Turnpike, extending from Winchester to Tennessee, passes nearly a mile and a quarter through the farm, over which several mail coaches are driven every morning and evening, directly in sight of the house. These, together with the large number of carriages and other vehicles, hourly passing through a densely settled country, give to the farm a most cheerful aspect. The morning papers from Washington and Baltimore are received every day soon after dinner. The celebrated Capon Springs are but 20 miles off—Jordan's Sulphur but 10. There are 20 churches of various denominations within a

circle of 6 miles. A mile and a half from the farm is the village of Newtown, containing nearly 1000 inhabitants, with churches, an academy, post office, several stores, and various mechanic shops, &c. The farm is surrounded by a refined society, and in forty minutes a gentleman can take his family to Winchester over a beautiful turnpike to church, or upon a visit to a very clever and genteel people.

Sincerely desirous to sell this estate, but to avoid all higgling and needless applications, I will state my price for the whole, including the mills described, is \$72,000—one-half cash, the balance I am content to say two, four, six and eight years, the purchaser paying interest and securing all by a lien on the property. There are three farms united, with improvements on each, but I will not separate them in any sale. A good manager may always calculate on from 5000 to 6000 bushels of wheat each year, worth at the home market an average of \$6000. This is a clear net crop, for the corn, hay, stock, &c., will more than pay all expenses. The mills, houses and orchards, will rent for \$1200 per annum—thus making an income of \$7200 from about \$80,000 invested, including stock on farm, &c., or about 9 per cent. Such is the admirable tilth of this farm, its cleanness, condition of the fences, its level or gently rolling surface, &c., eight laborers can cultivate it. A healthier spot can hardly be found on earth. In a family of some 75 persons, including tenants, for 35 years, I have never known a case of bilious or intermittent fever.

To the wealthy merchant or professional man, who wishes to retire from business and enjoy health and ease, at a delightful residence, or the industrious farmer, looking to a profitable investment of his money, the extraordinary conveniences and resources of this farm present equal attractions. No one will purchase so valuable an estate without some personal acquaintance. To those at a distance disposed to inform themselves, I refer to a number of friends or neighbors who have visited this farm, many of whom are extensively acquainted with the facts set forth in this advertisement. In the event of a sale, the purchaser may have leave to sow wheat this fall, one hundred acres being already ploughed for the purpose, and I will give complete possession by the first of next October, if desired.

REFERENCES.—Hon. James M. Mason, Senator; Hon. A. A. H. Stuart, Staunton, Virginia; Charles Barnard, Esq., Boston; Moncre Robinson, Benjamin Etting, Esqs., Philadelphia; A. P. Kennedy, S. K. Burkholder, Esqs., Baltimore; Capt. L. M. Powell, Capt. William McBlair, United States Navy, Washington; Ro. B. Bolling, Esq., Petersburg, Virginia; William H. Macfarland, R. B. Haxall, Samuel Marx, Esqs., Richmond, Virginia; Myer Myers, Esq., Norfolk, Virginia; James K. Marshall, Esq., Alexandria, Va.; John G. Meem, Esq., Lynchburg, Virginia; Dr. Rice, New Market, Virginia; Dr. R. T. Baldwin, T. A. Tidball, H. M. Brent, James Marshall, Joseph H. Sherrard, D. W. Barton, Esqs., Winchester, Virginia; John S. Magill, William S. Jones, Joseph Long, James Chipley, F. B. Jones, James Gilkeson, Esqs., Frederick county, Virginia.

R. W. BARTON.

Near Winchester, Va., July 10, 1854.—auf

WILLIAM P. LADD, APOTHECARY AND DRUGGIST,
No. 319, head of Broad Street, Shockoe Hill, Richmond, Virginia, dealer in English, Mediterranean, India and all Foreign and Domestic Drugs and Medicines; also, Paints, Oils, Varnish, Dye-Stuffs, Window Glass, Putty, &c. For sale on the most accommodating terms.

Orders from Country Merchants and Physicians thankfully received and promptly attended to.
jan '51—tf

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED STOCK.—Stock Cattle of all the different breeds, Sheep, Swine, Poultry, &c. will be purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged.

Apply to AARON CLEMENT, Philadelphia.

Refer to Gen. Wm. H. Richardson, Richmond, Virginia
N. B.—All letters, post-paid, will be promptly attended to.

ap '53—tf

FARM, STOCK, CROPS, NEGROES, &C., FOR SALE.—The subscribers are authorized to sell a valuable farm in the county of Buckingham, $5\frac{1}{2}$ miles from the Court House, containing upwards of 800 acres, having on it every necessary improvement, consisting of a handsome two story dwelling just completed, barn with threshing machine, stables, corn crib, carriage and ice houses, blacksmith's shop, &c., with a kitchen and meat house about to be erected. It has also a fine garden and an orchard of choice fruit, embracing almost every variety grown in Virginia. It will be sold with the growing crops, (175 bushels of wheat and 100 bushels of oats have been seeded) stock, tools and implements of every description, and 16 first rate farm and house servants, one of whom is a good blacksmith.

This farm is situated in a region proverbial for health and agreeable society, 15 farms and dwellings being in view from the dwelling.

The owner desiring to remove to the South, and being unwilling to break up the relations existing among his negroes, will dispose of the whole at a good bargain.

For terms, &c., apply to

MARTIN GOLDSBOROUGH, Baltimore, or
RUFFIN & AUGUST, Richmond, Va.

jun—tf

SUPERIOR SWINE AND PREMIUM POULTRY.—I am prepared to engage pigs by my large Byefield and superior Suffolk boars, from matchless sows of the following breeds: Byefield, Suffolk, Skinner, Essex, Chester, Delaware, Cheshire and Russian—most of them of mammoth size.

The finest collection of ornamental and domestic Poultry in Virginia—receiving the premium as the finest collection and upon individual pairs. They consist of the following: Brahma Pootra, Imperial Chinese, Colatta, Dorking, Spangled Hamburg, Seabright and African Bantams, Sumatra Pheasant Game, Ablin Game, Mexican Game, Ebon Game, Crested Turkey, Purple Turkey, Pure White Turkey, Bremen Geese, Hong Kong Geese, Wild Geese, Crested Black and White Ducks, Java Ducks, Penguin Ducks, Rouen Ducks, Aylesbury Ducks, Pure White Guinea Fowls, Italian Pea Fowl, Madagascar or Lopped Eared Rabbits—ears 22 inches long, 5 broad.

The above are bred in separate apartments, and can be obtained at moderate prices by addressing

JOHN G. TURPIN,
mar—tf Clover Dale, near Petersburg, Va.

IMPROVED SUPER PHOSPHATE OF LIME.—The subscriber is manufacturing the above at his Bone Mill, a short distance from the city, of the best and purest kind. Farmers are requested to examine his before purchasing elsewhere; the quality will speak for itself, and his price is the same as that manufactured out of the State.

may—tf R. R. DUVAL.

GREAT REDUCTION IN PRICES OF HATS AND BOOTS.—J. H. ANTHONY'S FASHIONABLE HAT STORE, Columbian Hotel Corner. The cheapest place in the city of Richmond to buy hats and boots is at the above store, where every article sold may be relied on as represented. By this means he has gained a good run of custom, and his customers feel satisfied. Below is a list of his prices, which will be strictly adhered to:

Best quality moleskin, - - -	\$3 50
Second quality moleskin, - - -	3 00
Best quality silk, - - -	2 50
Second quality silk, - - -	2 00
Fine Calfskin Sewed Boots only three dollars and fifty cents.	

Also, Caps, Shoes and Umbrellas.

J. H. Anthony has made an arrangement with one of the best makers in the city of Philadelphia to supply him with a handsome and substantial calfskin sewed Boot, which he will sell at the unprecedented low price of three dollars and fifty cents. The attention of gentlemen is respectfully solicited, as they are the best and cheapest boots that have ever been offered for sale in this city. He intends to keep but the one kind, and sell them at one price.

mar '54—tf

GREAT PREMIUM FAN, patented December 20, 1853. Montgomery's Celebrated Double Screen Rockaway Wheat Fan, has, during the past year, been proved to be the best Fan ever offered in the Middle States, having taken premiums over all that have been offered to the public from every quarter of the United States. It took the first premium at the Maryland State Agricultural Society's Exhibition, in October last, where all the most celebrated Fans were in competition.

The first premium at the Virginia State Agricultural Society's Exhibition, in November last.

The Maryland Institute awarded silver medals to it at its Exhibitions in 1852 and 1853, as superior to all others on exhibition.

The first premium was awarded at the Talbot County (Maryland) Show, in 1852; and

The first premium at the Prince George's County (Maryland) Exhibition, in 1853, by the special vote of the Society, in consequence of its superiority and value, it being contrary to their standing rules to award premiums to articles made out of the county.

We annex the following certificate from a respectable farmer of St. Mary's county, and any number of others could be published if necessary, all tending to show the decided superiority of this Fan over any others that have ever been introduced in the Middle States—and as the manufacturers devote their whole attention to this one article, and rely for its continued success upon the faithfulness of its make, as well as the superiority of its principles of construction, farmers and others may rely on having their Fans made of the best materials and workmanship.

ST. GERAMERS, ST. MARY'S CO., MD., Oct. 6, 1853.

This is to certify, that I have tried Messrs. J. Montgomery & Brother's Wheat Fan in some tailings I made in cleaning a part of my crop, which I did not think could be made worth anything; it extracted from a bushel and a half of filth about three pecks of pure wheat. I must say that I never saw a Fan that can even come in competition with J. Montgomery & Brother's Rockaway Wheat Fan, for screening wheat.

BENJAMIN M'KAY.

REFERENCES.

City of Baltimore: John S. Williams, foot of Commerce street; Messrs. Seth & Godwin, No. 4 Bowly's wharf; E. B. Harris, No. 4 Bowly's wharf; Michael Dorsey, Light street; Thos. J. Hall, Light street; N. E. Berry, Lombard street, near Charles; R. D. Burns, foot of Bowly's wharf; Mr. Wilner, No. 2 Bowly's wharf—all commission merchants.

Virginia references: Hon. William S. Archer, Virginia; Gen. B. Peyton, Virginia; Hill Carter, Virginia; Lewis G. Harvey, Virginia; Rowlett Hardy & Co., Petersburg; A. C. Lane, Richmond; Robert Cole, Richmond, Virginia; M. Heartwall, D. I. Payner, James B. Lundy, J. Ravenscroft Jones, Geo. W. Field, Col. Isham Trotter, John Winbeiks, Wm. Towns, Jas. Hays, Sr., Dr. Wm. W. Oliver, Samuel F. McGehee, William M. Watkins, William I. Scott.

We are prepared to sell State or County rights to those who wish to manufacture our Fan.

All orders addressed to the undersigned at the Baltimore City (Md.) Post Office, will be promptly attended to.

J. MONTGOMERY & BRO.

No. 155 N. High st., between Hillen and Gay streets,
may—1y Baltimore.

GENERAL AGENCY FOR THE SALE AND PURCHASE OF LANDS.—FRANK: G. RUFFIN, Secretary of the Virginia State Agricultural Society, and N. AUGUST, Notary Public and Accountant, offer their services to the public as General Agents for the sale and purchase of lands in Virginia, and in the Southern and Western States. Those wishing our services, having lands for sale, are requested to furnish us with a full description of such property, and the terms, &c., upon which they are willing to sell; and those wishing to purchase are requested to inform us of the locality in which they wish to purchase, the price they are willing to pay, &c. Our charges will be moderate.

Office at the office of the Virginia State Agricultural Society.

jan—tf

IMPORTANT TO AGRICULTURISTS.—I desire to call the attention of the farmers of Virginia, Maryland, &c., to my patent attachment for grinding and distributing guano, and to give notice that I claim to be the true and original inventor of these machines now on sale at the agricultural warehouse of Addison & Meade, Alexandria, Va., and which will be for sale at the warehouse of Baker & Brown, Winchester, Va. They are also in possession of many farmers in Clarke, Jefferson, Culpeper and other counties. Although a patent has been granted by mistake to Messrs. Henson & Rhor of Charlestown, Va., for a part of my machine, I have taken measures at the Patent Office to establish my original exclusive title to the invention claimed by them, and shall enforce my rights by the due course of law.

Persons desirous of obtaining these machines, or wishing to purchase rights for counties, States or territories, will please apply to me at Summit Point, Jefferson county, Va., or to Addison & Meade, Alexandria, Va., or to Baker & Brown, Winchester, Va. Farmers can have the attachment affixed to any drill by application as above.

jun—3t

T. F. NELSON.

CRYSTAL PALACE.—World's Fair, New York, United States of America—Association for the Exhibition of the Industry of all Nations.

EXCELSIOR.

The Association for the Exhibition of the Industry of all Nations awards to ELISHA S. SNYDER of Charlestown, Jefferson County, Virginia, the highest premium Bronze Medal, with special approbation, for the combination he has effected, and the practical application he has given the same, in his Labor Saving Machine for Threshing, Separating, Cleaning and Bagging Grain. Hon. Theodore Sedgwick, President of the Association; Hon. Henry Wager, Western New York, Chairman; Watson Newbold, Esq. Columbus, New Jersey; Col. John W. Proctor, Danvers, Massachusetts; Maj. Philip R. Freas, Germantown, Pennsylvania; Hon. Henry S. Babbitt, Brooklyn, Long Island, acting Secretary in Class 9, July C.

My Patent Premium Threshing, Separating, Cleaning and Bagging Grain Machine, is for sale, which received the first premium at the Crystal Palace, New York, over all Threshing Separating, Cleaning and Bagging Grain Machines on exhibition, thus proving conclusively that simplicity in construction, cheapness in price and durability in my machine, is being fully appreciated, and the old and new costly inferior complicated Separating Machines, must yield their places to a superior Labor Saving Machine. The celebrated Machine for Threshing, Separating, Cleaning twice, Screening and Bagging Grain by one simple operation. The greatest labor saving Machine in the world for separating all pure and impurities. This Machine throws the straw to itself, the chaff to itself, the wheat in the bag, the screenings to itself, and the smut and cheat to itself. Every thing has a place, and every thing is in its place to suit the conveniences of the farmer. For simplicity, durability, cheapness and capacity, it has no equal in the world. As for what has been stated in the different papers concerning Mr. Zimmerman's Machine receiving the first premium at the Crystal Palace, New York, is false, and not true. It is also stated that Mr. Zimmerman received a number of premiums at — and other fairs. That I know nothing about; perhaps he did; but it is very easy to win the race, as the boy said when he ran by himself. But, my honorable friends, this was not the case at the World's Fair, New York. Mr. Zimmerman had a number of other boys to run with besides himself, which made the race more difficult for him; so much so, that he, Mr. Zimmerman, was neither first nor second; so you may judge where he was.

These are facts that cannot be denied. The undersigned would inform the public that his Farmers' Labor Saving Machine for Threshing, Separating, Cleaning, Screening and Bagging all kinds of Grain, is for sale. Farmers wishing to buy the best Machine in use, will address JOSEPH GLAZE, Frederick City, Maryland. Those wishing to purchase the Patent Right to manufacture the Machines, will address me at Charlestown, Jefferson County, Virginia.

ELISHA S. SNYDER.

July 1, 1854—12t

STEPHEN H. FISHER, MANUFACTURER OF BOOTS AND SHOES, No. 228, Broad Street, north side, between 3d and 4th streets, Richmond, Virginia, keeps constantly on hand a full assortment of ready made Boots and Shoes of his own manufacture, for Ladies' and Children's wear, which he will sell as low as can be purchased in this city. Boots and Shoes for Gentlemen and Boys on hand, or made to order at short notice. Servants' Shoes of all qualities always on hand. All work warranted.

☞ Farmers are invited to give him a call. oclly

VALUABLE TRACT OF LAND on GUINEA CREEK AND APPOMATTOX RIVER in Cumberland county, for sale.

The subscriber offers for sale the valuable estate known as "Mill Mount," formerly the residence of Dr. Montgomery Osborne, situated on the waters of Appomattox River and Guinea Creek, in the county of Cumberland, immediately in the vicinity of the Stony Point Mills.

"Mill Mount" contains 934 acres: 200 acres are in original forest, 223 acres low grounds and second low grounds on the river and creek; and 108 acres in four tobacco lots on high land. The dwelling house is a large and commodious one, and is situated on one of the most beautiful and romantic spots in eastern Virginia; the neighborhood is proverbial for health and its fine society.

The subscriber being in bad health and determined to sell, a good bargain may be had by early application to him. Any other information that may be wanted can be had by addressing the subscriber, "Stony Point Mills P. O." Cumberland county, Va.

july—2t

STEPHEN C. ANDERSON.

PREMIUM THRESHING MACHINES.—The subscriber is prepared to furnish Threshing Machines and Horse Powers of the most superior construction. Having received the first premium at the Virginia State Agricultural Society for the best Threshing Machine without separation, he feels confident in recommending them to farmers. As a proof of their durability, he is able to refer to hundreds which have been in use for from 15 to 20 years. Various sizes from \$50 to \$100, all warranted to give satisfaction. The usual variety of machines are at my manufactory. The Revolving and Wire Tooth Horse Rakes should be on every farm.

H. M. SMITH.

July—2t

GENERAL AGENCY AND COMMISSION BUSINESS.—The subscriber tenders his thanks for the many calls heretofore received, and again offers his services on reasonable terms. Now for sale many Farms in Maryland and Virginia, Stallions, Bulls, Bucks, Boars, of improved stock; improved Fowls of all kinds; Mares, Cows, Ewes, Sows; Ewes one-half and three-fourths Cotswold; Calves at three months old, one-half Alderney; South Down Ewes with their lambs. For particulars address (post paid) the subscriber,

MARTIN GOLDSBOROUGH,

38 Holliday Street, Baltimore, Maryland.

P. S.—Answers to letters particularly desired. M. G. may—tf

ALBANY TILE WORKS, corner of Patroon and Knox streets, Albany, N. Y. Drain Tile of the following descriptions and prices suitable for land drainage, always on hand in large or small quantities of the first quality, delivered at the docks and railroad depots free of cartage:

Horse-shoe Tile.

4½ inch calibre,	\$18 per 1000 feet.
3½ do.	15 do.
2½ do.	12 do.

Sole Tile or Pipe.

3 inch calibre,	\$18 per 1000 feet.
2 do.	12 do.

Large Tile for drains about dwellings, yards, &c., of various sizes, \$4 and \$8 per 100 feet. Sole Tile, 4 inch calibre, for sink drains at \$4 per 100 feet. Drain your land and save your crops. Orders from a distance will receive prompt attention.

A. S. BABCOCK.

Albany, April 20, 1854.

jun—tf

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WHAT DO THE PHYSICIANS SAY?

☞ Listen to the testimony of an eminent physician in favor of McLane's Vermifuge, which is now universally acknowledged to be the best in use; even members of the medical faculty (who are so often opposed to the use of patent medicines,) cannot withhold their approval of this invaluable remedy:

LIND, STARK CO., OHIO, Jan. 8, 1849.

I have used Dr. McLane's Worm Specific in my private practice, and am prepared to say that the unparalleled success with which I have prescribed its use, both for children and adults, induces me to say the most in its favor of any specific or patent medicine ever before brought to my notice. The mode of administration, the smallness of the dose, and the certainty of its efficacious effects, give it, in my opinion, a decided advantage over any other medicine of the kind before the public.

☞ Purchasers will be careful to ask for "Dr. McLane's Celebrated Vermifuge," and take none else. All other vermifuges, in comparison, are worthless. Dr. McLane's Vermifuge, also his celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

HAVE YOU A DISEASED LIVER?

☞ The question, though startling, is sufficiently suggestive, when the fact is taken into consideration that diseases of the Liver have become most alarmingly frequent in the United States. Indeed, there are few formidable diseases that are not in some way traceable to a deranged state of that important organ. Many of the complaints usually classed under the head of Consumption, have their origin in the Liver. "Any remedy that would insure regularity and healthful action in the Liver, would be a blessing to mankind!" has been the exclamation of thousands. That remedy has been found; it is safe and sure. When a fair trial has been afforded it, it has never been known to fail.

Reader, have you any disease of the Liver, or disease which you believe proceeds from hepatic derangement? Lose not a moment, but purchase a box of Dr. McLane's Pills, and they will restore you to health. It is the only remedy yet discovered, in which implicit confidence may be placed.

☞ Purchasers will be careful to ask for "Dr. McLane's Celebrated Liver Pills," and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. McLane's Liver Pills, also his celebrated Vermifuge, can now be had at all the respectable Drug Stores in the United States and Canada.

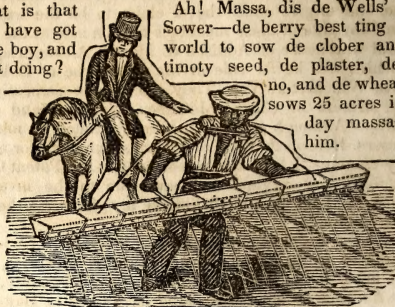
For sale by
aug—11

PURCELL, LADD & CO.
Corner Main and 14th street, Richmond.

READ, CONSIDER AND ACT WISELY.

IMPORTANT TO FARMERS!

What is that you have got there boy, and what doing?



Ah! Massa, dis de Wells' Seed Sower—de berry best ting in de world to sow de clober and de timoty seed, de plaster, de go-no, and de wheat. I sows 25 acres in one day massa—try him.

It is only by the use of valuable improvements that we can reasonably expect to keep up with the age in which we live, and public opinion everywhere has placed M. D. Wells' Improved Patent Seed Sower in the first class of agricultural implements. The above drawing exhibits it in use, and any ordinary mind must at once be impressed with the certain conviction that it is an indispensable implement of husbandry, and that every good farmer should have it. By its use you save time, which is money and labor which costs money, and experience in using it proves you will not be driven from the field unless by very rough weather, and the almost mathematical precision with which the seed is distributed, compared with hand sowing, renders it self-evident in the opinion of the best farmers that a saving or gain of two dollars per acre is made in two crops of grass and the succeeding crop of wheat, one year's interest on an acre of land at \$33 $\frac{1}{3}$, and sowing three acres pays for a machine with lid at \$6.

The first premium was recommended for this machine at the late Virginia State Fair, and four of the committee (all having use for it) engaged one each; and we think if governed by your interest you will do likewise.

MOTT, LEWIS & WILLSON,

Sole agents for Richmond—Agricultural Implement
fe—tf Store, No. 36, Main Street.

MERINO SHEEP.—Having increased my flock of Merino Sheep on my farm, in Orange county, to over 800 I am now prepared to sell a few choice yearling Bucks and Ewes. To all who have any acquaintance with Col. Henry S. Randall of New York, and the reputation of his flock, it is only necessary to say that the yearlings I propose selling are the product of ewes purchased of him when he sold out last year, and selected by him personally as the best in his flock. I have his letters, saying that he was offered the same price for his ewes by his neighbors, but that in starting the growth of fine wool in Virginia it was very important to have good sheep, and as he knew these were superior, he preferred selling them to go there. I shall sell no bucks except such as show marks of superiority. All who want to raise their flocks to a high standard at once will do well to apply early, as I have but a limited number for sale. Address by mail, or apply to

WM. G. CRENSHAW, or
CRENSHAW & CO.,

june—tf North side of the Basin, Richmond, Va.

PERUVIAN GUANO.—Having on hand, and engaged to arrive, a large supply of Guano, we solicit orders. All who buy of us may rely on getting it genuine, as we sell none except what comes direct from the Peruvian agents.

CRENSHAW & CO.,

june—tf North side of the Basin, Richmond, Va.

M'CONNELL & BURTON,

DENTISTS,

Main Street, between 9th and 10th Streets, Richmond, Va.

JOHN M'CONNELL.

W. LEIGH BURTON.

ap—tf